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Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

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TRANSISTOR'S 10TH YEAR

Making a new kind of transistor at Bell Laboratories, where device was invented 10 years ago. As a substitute for the vacuum tube, it has had far-reaching significance in electronics. See page 26 for history of transistor.

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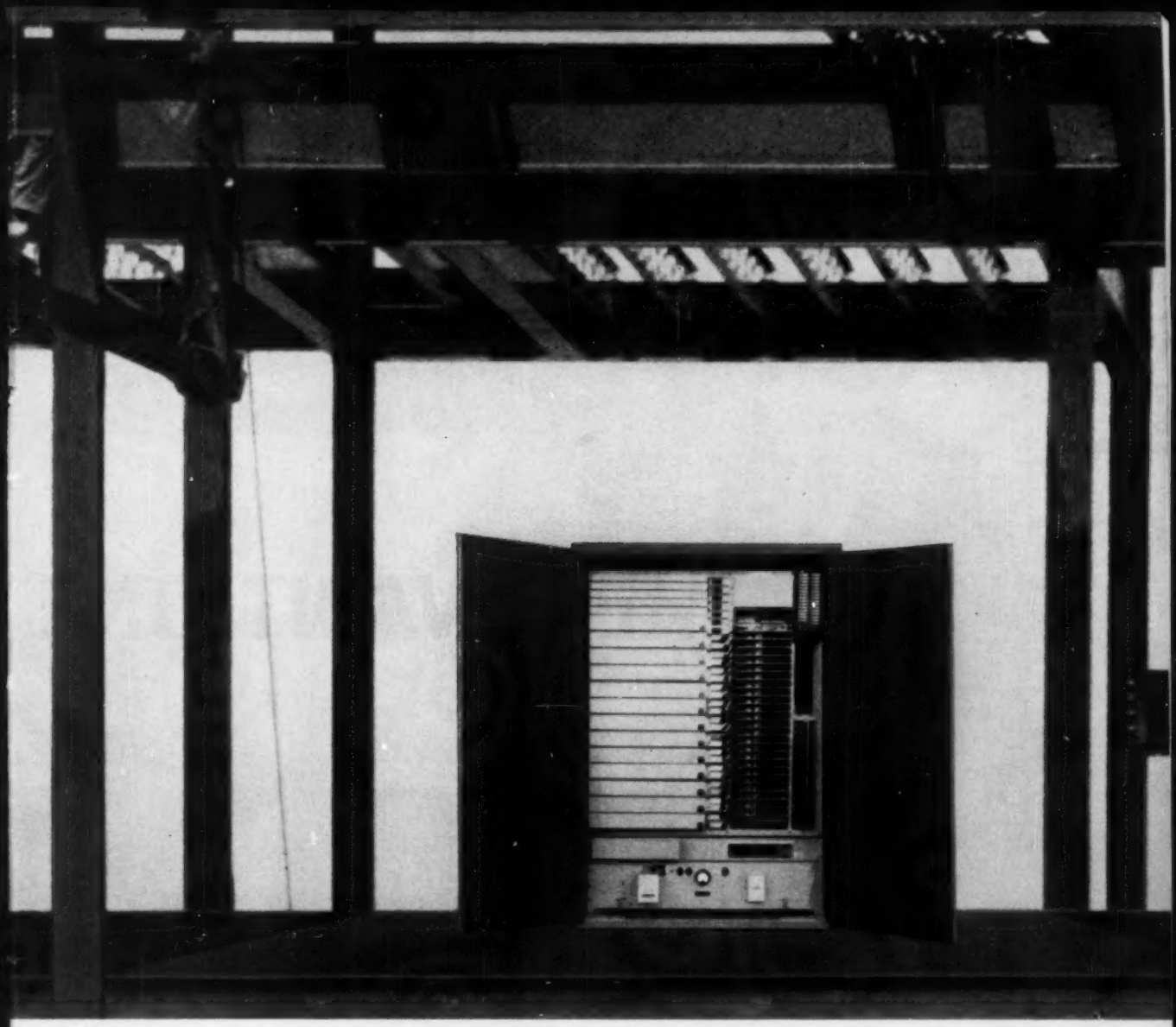
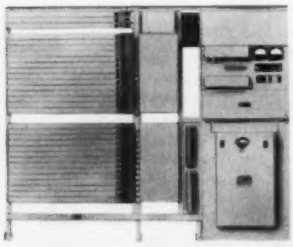
● REVENUE BUILDERS...The heart of an industrial, institutional or commercial building is its communications system. These dial PBX's by Stromberg-Carlson -- the F-40 and F-80 -- meet the needs of a wide range of subscribers. The F-40 is small, compact, quiet in operation. You can easily roll it anywhere, place



it where you like, because it's styled as modern office furniture. The F-80, with its larger capacity, is



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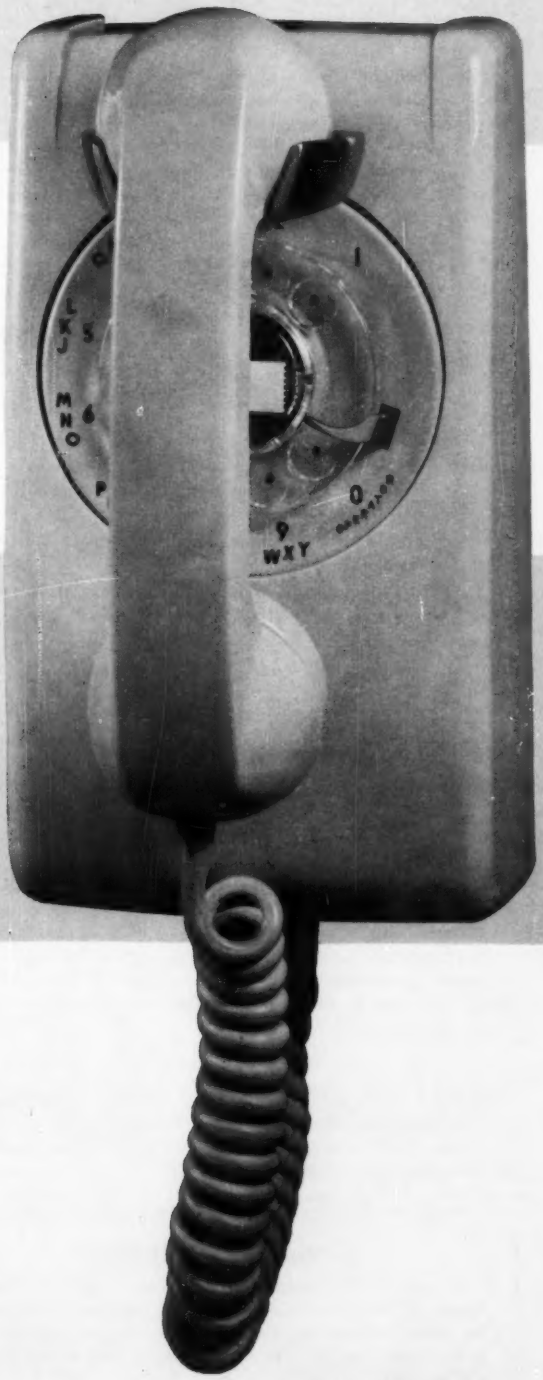

Your customers have been seeing an attractive new wall telephone in their favorite magazines. They have seen it in color ads, and in picture stories about kitchens and recreation rooms. That familiar, neat design is what your customers have in mind when they order a wall phone.

And now you don't have to sell them a different design . . . you can give them exactly what they want, the Kellogg K-500. It is available to you for immediate delivery in 8 decorator colors.

THE KELLOGG K-500 WALL PHONE IS AVAILABLE IN 8 COLORS

FLASHES AND PLUGS

CIRCULAR CIRCUIT. Gene Sherman, writing in the *Los Angeles Times*, tells about Lawyer Isadore Moidel's experience with push-button telephones.

The other late evening, Mr. Moidel hurriedly called his home from his office. As soon as he heard the ring on the other end, a button flashed, indicating a call on his second office line. So, he hung up and answered the incoming call. But the line was dead.

Again he called his home. Again his other line lighted up, and again when answered, it was dead. When it happened the third time he realized he'd been making a not uncommon mistake. He'd been calling his own office number instead of his home number and hanging up before he answered himself. That's what happens when a lawyer tries to talk to himself.

•

CANCEL THAT TRIP! A self-made man who built a fortune by giving orders was so used to having them carried out that he became enraged when a telephone operator couldn't get him the number he wanted—and he told the young lady to leave for Hades.

That afternoon, a telephone company representative called to inform him that his telephone would be taken out if he didn't call the operator back and apologize.

Forced to the wall, he begrudgingly got the lass back on the telephone and said:

"Do you remember this morning when I told you to go to the devil?"

"Yes, sir," she said in a tone of sweet anticipation.

"Well," he snorted, "you don't have to go!"

•

SOMETHING MISSING. In Hammond, Ind., Patrolman Robert Dowling was unable to make his hourly report to the police station. It seems someone had stolen his call box.

•

PRICE OF POLITICS. Columbus Attorney Frank H. Ward filed a report on his expenses in his campaign for representative in the Ohio legislature. They included:

$2.25 for shoeleather, $9.00 for a collect call from a voter who regretted he couldn't vote for him, and a 75-cent parking fee while attending a committee meeting that refused to endorse him.

He lost the race.

•

TROUBLE SHOOTING. Strange sounds emanating from her kitchen stovepipe sent Mrs. Virgil Tucker racing to her telephone for help. Englewood, Colorado police quickly found the source of the sound—a sooty woodpecker.

CHANGE OF ADDRESS

Please notify your local postmaster and the Circulation Dept. of TELEPHONY of change of address. Change cannot be made without the old as well as the new address. Allow three weeks for change of address to become effective.

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY
Since 1901

June 21, 1958

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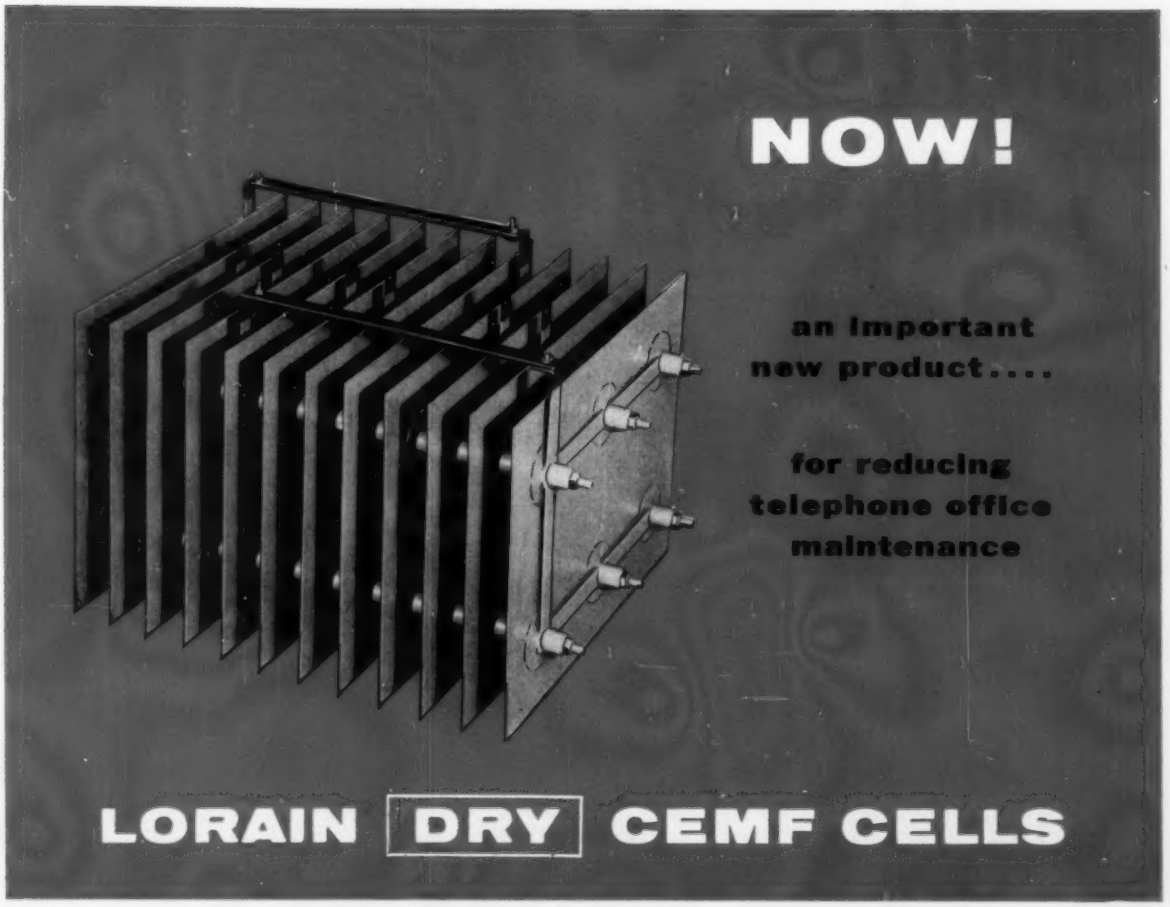

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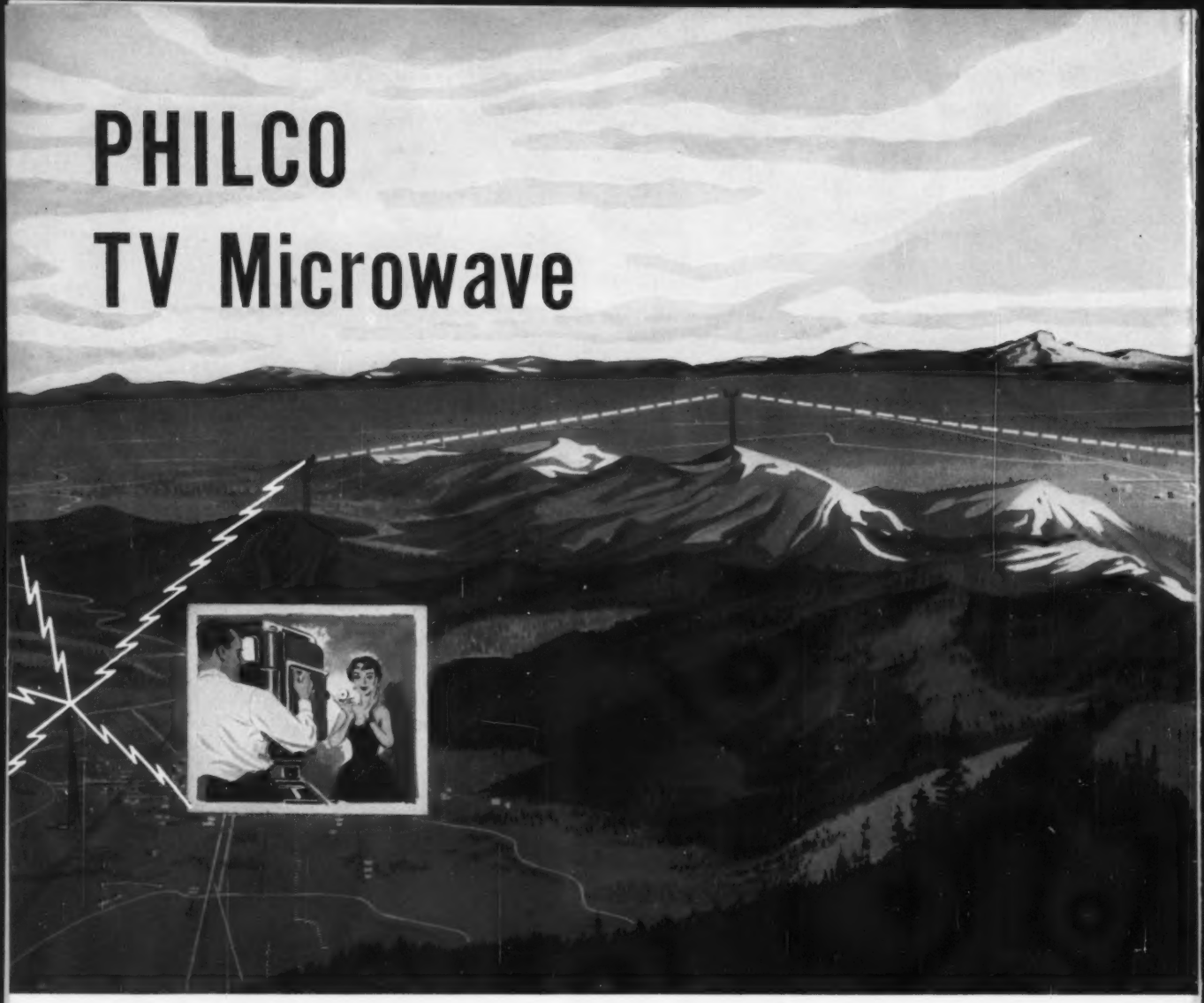

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Philco television microwave systems provide economical transmission of NTSC compatible color or monochrome TV signals . . . plus full audio channel. Here is modern microwave . . . especially designed to meet the needs of community TV operators for thoroughly dependable operation. Philco TLR systems provide S-T-L relaying in the 5900 to 7400 mc bands.

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- **Philco offers complete turnkey service . . . surveys . . . installation . . . maintenance**

Repeater—The Philco TLR-4 Microwave Repeater is a true repeater utilizing the heterodyne principle to produce high performance quality and simplicity of operation and maintenance.

Because video performance of a microwave system is determined mainly by the transmitting and receiving terminals, the introduction of the TLR-4 Heterodyne Repeater, which is essentially transparent, results in optimum overall system performance.

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Field maintenance testing of the TLR-4 Repeater is rapid, consisting only of RF and IF bandpass checks. Only simple IF sweep equipment is needed to obtain original factory alignment of the IF strips for differential phase and differential gain requirements. No special phase testing nor phase correction adjustments need be made.

Transmitter—The Philco Model TLR-6 Transmitter consists of three basic units: (1) a transmitter chassis, (2) a +750 volt de power supply and (3) a +300 volt de power supply. All units are designed for rack mounting in a standard 19″ relay rack.

Transmitter chassis contains the reflex klystron r-f generator and associated modulator, a-f-c circuits; wavemeter and amplifier, metering circuits for monitoring within the equipment, a built-in test signal generator, and a —500 volt power supply. All operating controls and the more frequently used maintenance controls are located on the front panel of the transmitter chassis.

Receiver—The Philco Model TLR-6 Receiver consists of seven basic units: (1) a Pre-Amplifier and Mixer Assembly, (2) a Receiver Chassis, (3) an Automatic Frequency Control Chassis, (4) a Local Oscillator Chassis, (5) a Video Chassis, (6) a 300 Volt Power Supply and (7) a 105 Volt Power Supply.

The Pre-Amplifier and Mixer Assembly is connected to the waveguide support at the rear of the rack, while the remaining six units are rack mounted.

The Receiver Chassis contains an IF amplifier plus metering circuits for monitoring critical points within the equipment.

The Automatic Frequency Control Chassis contains a repeller power supply in addition to the AFC circuits.

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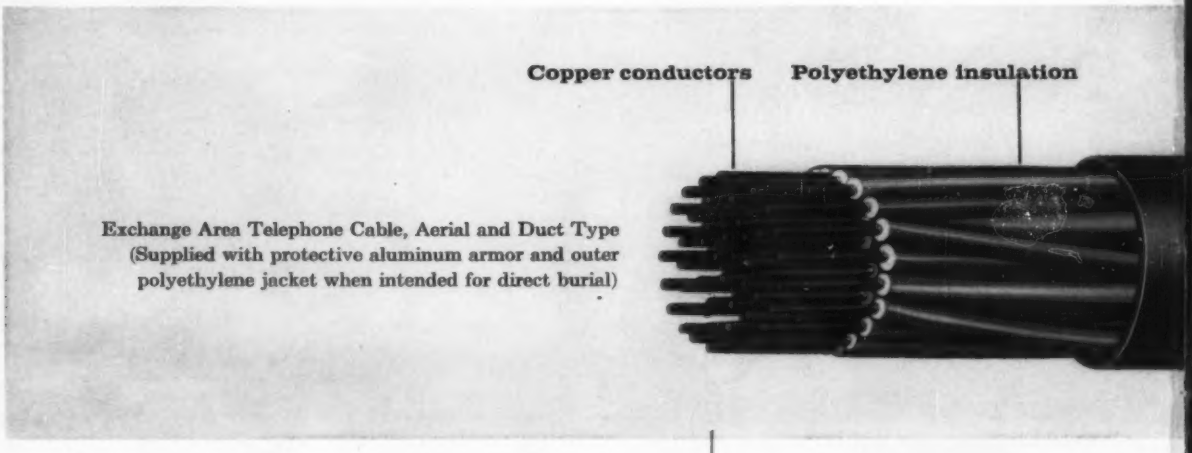

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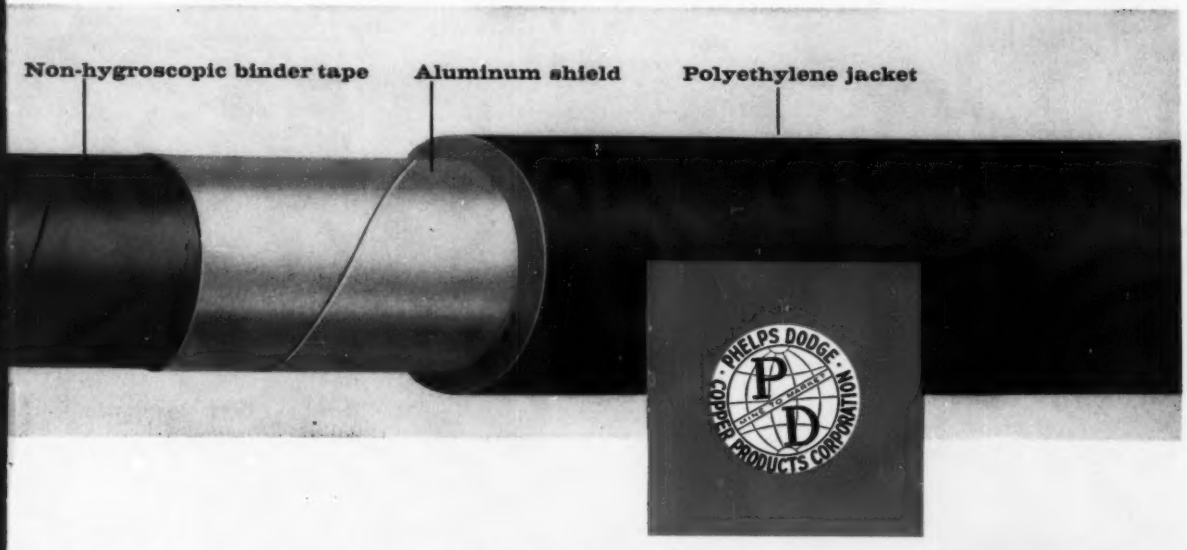

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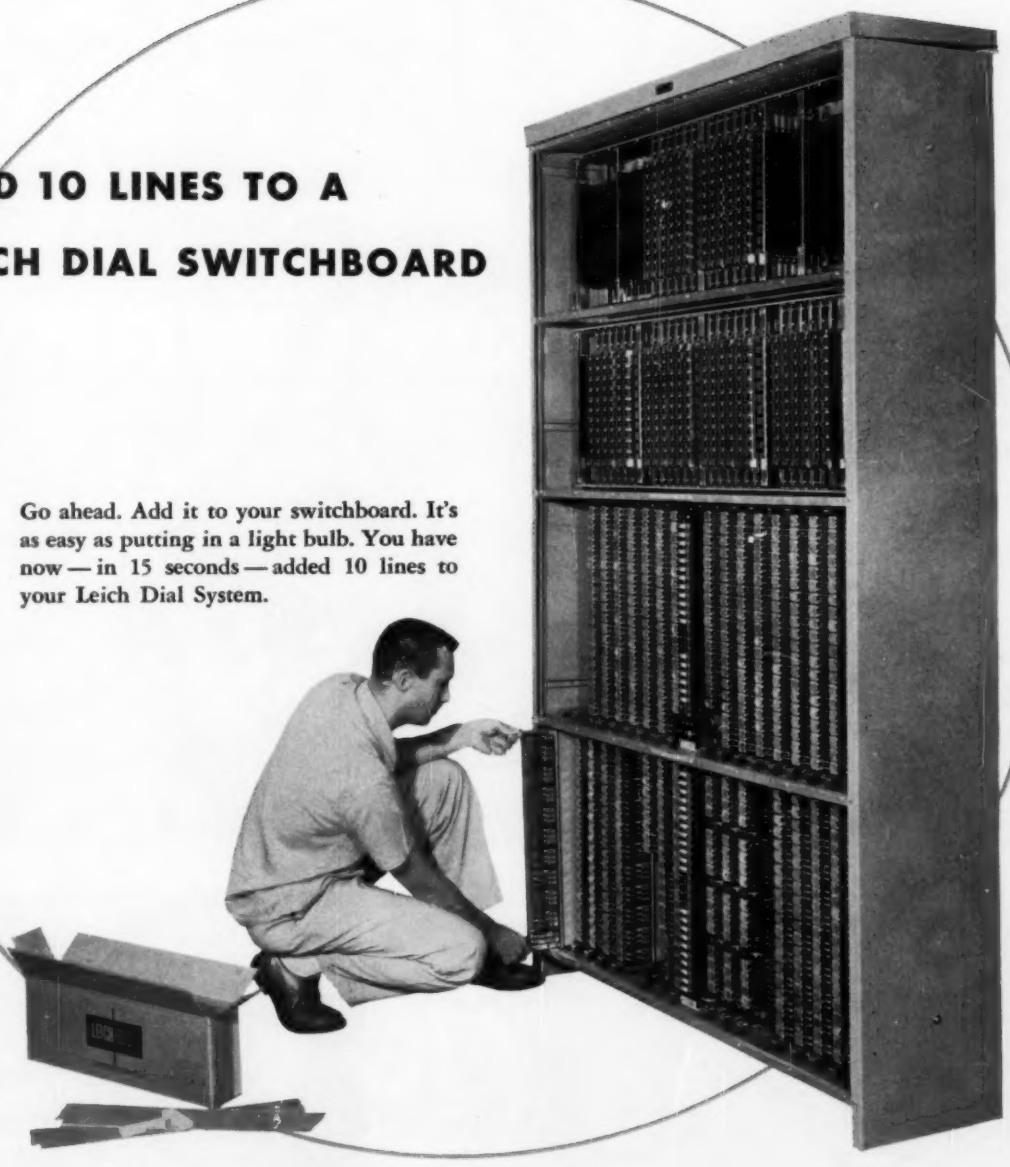

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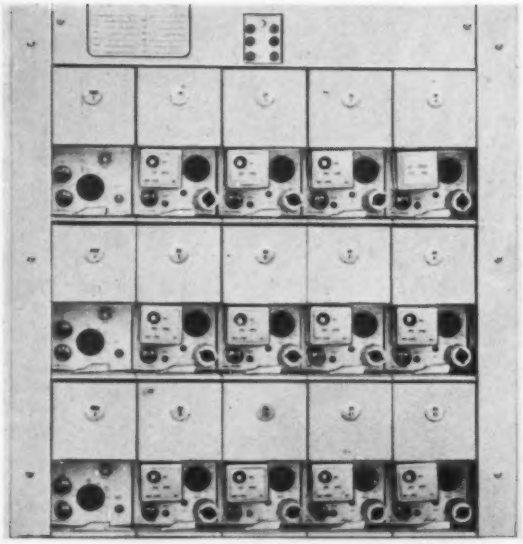
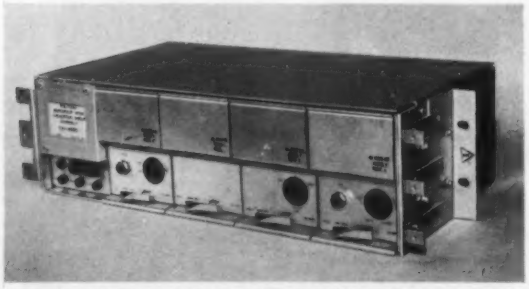


Typical Lenkurt 45-Class Basegroup Channel Bank provides channelizing and grouping equipment for 12 voice channels, yet occupies only 22¾ inches of vertical rack space. Type 45C Carrier provides for economical expansion in 4-channel groups by the simple addition of interchangeable plug-in units.



Lenkurt Basegroup Transfer-Converter permits transfer of 12-channel groups between Lenkurt 45-Class systems and Western Electric J, K, L, or CCITT conforming systems. It eliminates expense of extra channelizing equipment—permits different carrier systems to be connected in tandem without demodulating the individual carrier channels to voice frequency.

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Lenkurt Carrier is the simplest, fastest, most economical way to add new circuits. Lenkurt's famous 45-class Carrier systems—for open wire, cable and microwave—offer the unique advantage of *direct interconnection at carrier frequencies*. Thus, your entire carrier network can be completely coordinated! No need for expensive back-to-back equipment to convert carrier to voice frequencies, and then back to carrier. Maintenance is simpler—distortion reduced—performance improved. Think what it means in savings to you!

New Lenkurt Microtel Type 74A

Lenkurt's new Type 74A Microtel for the 6000 mc band is the latest, most advanced microwave equipment on the market. Utilizing miniaturized plug-in components similar to those in Lenkurt 45-class Carrier equipment, it offers extreme flexibility—meets expansion needs from as few as four channels to high-density intercity systems.

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toll revenues!

open wire or cable

at carrier frequencies!

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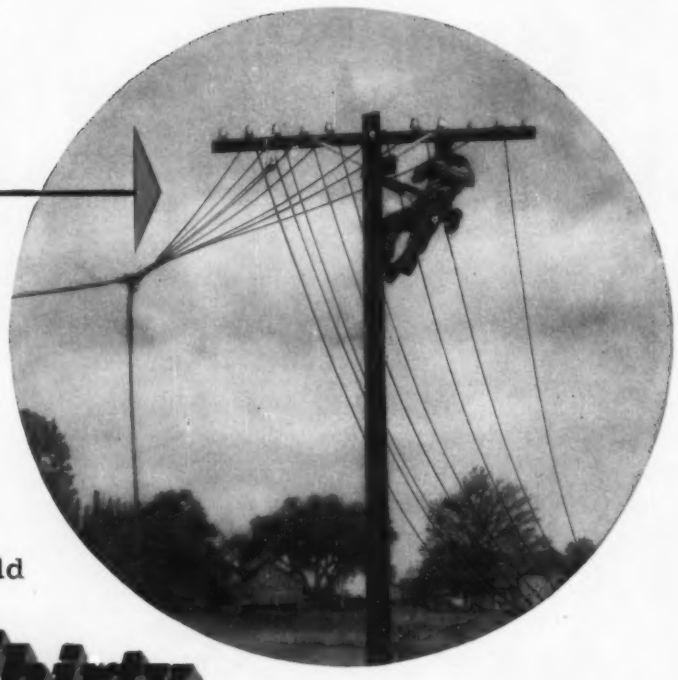

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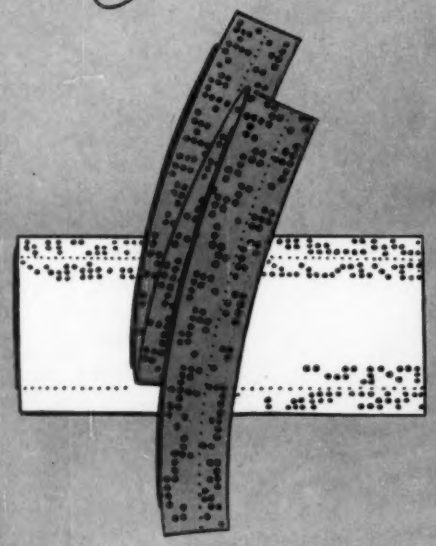

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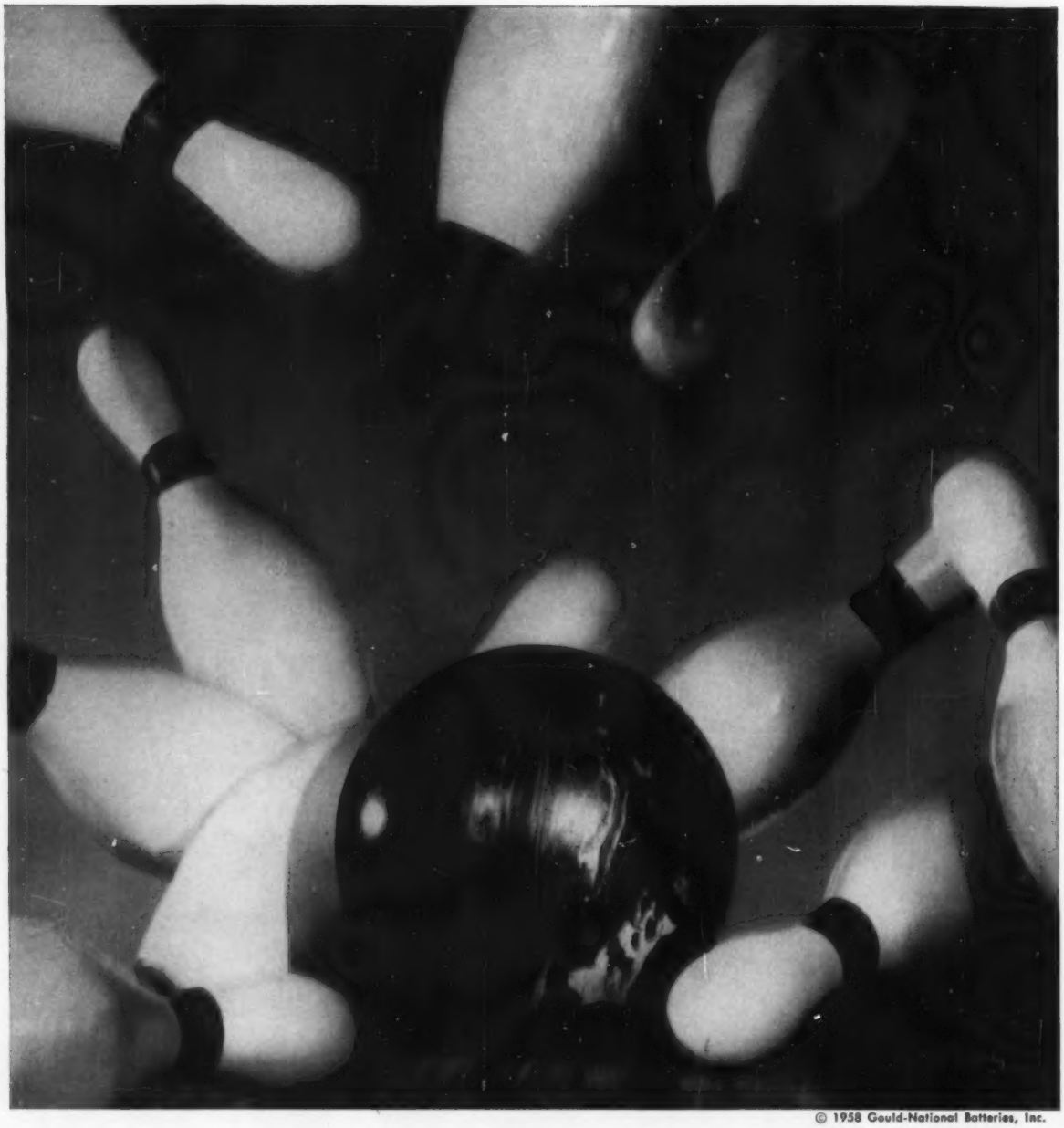
City_____ Zone____ State_____



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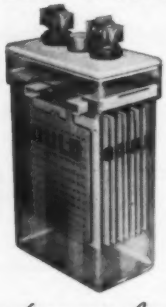

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IN THE NATION'S CAPITAL

BY FRANCIS X. WELCH, WASHINGTON EDITOR

Evaluation of REA unlikely to produce any overhauling. Telephone stocks rate among favorites in survey of investors. Investigation of alleged improper influences on members of the FCC continues. Coupon tie-in arranged between New York City Transit Authority and soap and detergent maker.

EARLIER this month there was an opportunity afforded for those who had something to say for or against the Rural Electrification Administration to air their views before Senate and House committees. In the Senate, the sounding board was provided by the Government Operations Subcommittee. In the House, the Subcommittee on Executive and Legislative Reorganization provided the forum. In both places, the hearings were largely in the nature of "windmill sessions" —more useful for ventilation than for any serious basis for Congressional action.

There was, however, an actual legislative excuse for these vocal exercises by pro-REA and anti-REA witnesses. This was the so-called Humphrey-Price Bill, which would return control of REA to the REA Administrator instead of continuing as a subordinate bureau of the Agriculture Department, as it is at present. It might be said at the outset that there is little chance of the Humphrey-Price Bill getting through Congress. And even if it should get through Congress, President Eisenhower would almost certainly veto it.

But that outlook did not deter witnesses from telling Congress, in some detail, what they thought of REA as presently conducted. The most vociferous witness of all was Clyde T. Ellis, general manager of the National Rural Electric Cooperative Association. Mr. Ellis appeared before both Senate and House groups. And you can take his word for it that there is a sinister plot afoot in Washington to "do in" REA. While these alarming views were presented by Mr. Ellis in his customary vigorous fashion, nobody got too excited on Capitol Hill. Mr. Ellis has seen conspiracies forming and dire threats to kidnap REA going on for years. Meanwhile REA keeps getting bigger and fatter.

Anyhow, from the other side, Secretary of Agriculture Benson denied that there was any "master plan" (to use Mr. Ellis' expression) to destroy REA or the effectiveness of its program. Benson had been charged by Ellis with downgrading the REA Administrator by requiring that all new REA loans over $500,000 be reviewed by the Agriculture Department. This action of Benson's was called a "breach of faith" and part of the "master plan." Benson said it was no such thing. He said his action did not involve any major policy change, that it was made in the interest of efficiency.

REA Administrator Hamil, defending his own superior (Benson), told Senator Hubert H. Humphrey (D., Minn.) that the review of REA loans by an Agriculture Department official had not hampered REA. All the Agriculture people do, Hamil said, was to make "suggestions" as to proposed large REA loans. Sometimes their "suggestions" were followed and sometimes not. Hamil revealed that his own decisions on loans had been sustained several times despite contrary opinions by the Agriculture Department.

The House Subcommittee on Executive Reorganization heard similar charges aired against the administration's REA policies. More than a score of representatives of rural co-ops testified to the vital importance of an unfettered REA and low interest rates to assure maintenance and expansion of rural electric service. The consensus was that it was imperative to approve the Humphrey-Price Bill to return control of REA to its Administrator.

But, as already stated, the outlook is that no such action will finally be taken at this session. Neither is it likely that REA's cheap interest rate of 2 per cent will be increased. And so REA is going right along, regardless of either praise or criticism from friend or foe.

Telephone Stock Favorites

American Telephone & Telegraph is rated by readers of *The Exchange* magazine as the top stock for safety of principal, dividend income and as a gift to a minor. General Dynamics and General Telephone stocks were also rated among the top 15 stocks. International Business Machines is the favorite from the viewpoint of growth. And General Electric is the first choice for accumulation under the Monthly Investment Plan.

These findings are gleaned from answers to questionnaires distributed to readers of the New York Stock Exchange's official publication. Thus far (June 12) more than 15,000 replies have been received, of which 5,425 have been tabulated and used as a basis for this preliminary report. From the questionnaires compiled, emerged the 25 most popular stocks for each of five investment objectives: Safety of principal, dividend income, future growth, accumulation under the Monthly Investment Plan (M.I.P.), and gift to a minor.

Five common stocks — AT&T, du Pont, General Electric, General Motors,

and Standard Oil of New Jersey—were selected by readers of *The Exchange* for all five investment objectives. Three stocks—International Business Machines, Eastman Kodak and U. S. Steel—were selected for investment goals except dividend income.

Fifteen other issues were named as serving to fill three investment needs—future growth, M.I.P. accumulation and gift to a minor. These selections were: American Cyanamid, Columbia Gas, Commonwealth Edison, Consolidated Edison of New York, Dow Chemical, General Dynamics, General Telephone, Gulf Oil, Pacific Gas & Electric, Phillips Petroleum, Safeway Stores, Sperry Rand, Standard Oil of California, Union Carbide and Westinghouse Electric.

Free Loading Quiz Goes On

The House Subcommittee on Legislative Oversight continues to drone through additional incidents of alleged improper influence exercised on the Federal Communications Commission. The latest alleged "scandals" are quite nonpartisan in scope. Charges were made that President Eisenhower's personal adviser, Sherman Adams, accepted favors from a Boston businessman with the implication that his influence might thereby be obtained.

Senator Symington (D., Mo.), a dark horse for the Democratic presidential nomination, was also named as having interceded with former FCC Commissioner Richard A. Mack on the behalf of a St. Louis TV station owner. Improper influence or intent was hotly denied in both instances although the favors were admitted in the case of Adams.

What puzzles this observer is just how these investigating Congressmen, some of whom have been in Washington for years, can be so "all shook up" about the discovery that behind-the-scenes pressure has been put on members of the FCC or on other federal agencies and officials. An old pro, such as Representative Harris (D., Ark.), who has been on the Capital scene for a long time and certainly knows his way around, should not be so astonished at this late date by what he calls "a pattern of influence."

The subcommittee's counsel, Robert W. Lishman, said that "in nearly every important contest" for a TV channel which the subcommittee has investigated, there are facts to indicate such "a pattern" of informal pressure. But this sort of thing has been going on ever since the days of Old Hickory, who honestly admitted that political victory ought to bring an appropriate reward to the victors. Of course we did not have regulated commissions back in the days of Andrew Jackson. But the "spoils" system—which started more or less openly around that time—has been going along ever since. Why any Congressman should be startled about lawyers and businessmen and other Congressmen dropping around to see regulatory commissioners on behalf of their clients, friends, and constituents is one of the more startling "revelations" of the House subcommittee's investigation.

It was Congress which created these regulatory agencies—most of them during the days of the New Deal. It is Congress which appropriates money for their upkeep and legislates further laws and rules governing their policies and operation. It is surely no surprise that members of these agencies are inclined to listen when individual Congressmen or other leading political figures make informal calls or visits. As for businessmen and their lawyers, there has long been a cynical observation around Washington that "it is not *what* you know, but *who* you know that counts."

Influence peddling being a form of practice well known to exist in the Nation's Capital, the shocked and dismayed tones of the House investigators sound strange—especially from such experienced sources. Of course there are canons of ethics and laws on the statute books which are supposed to discourage such back-office law practice and informal advocacy. But such canons of ethics and statutory provisions only work with people who already have the moral conviction that back-stage pressure is improper and unworthy of them. It goes without saying that there are thousands of upright and scrupulously honest public officials, regulators, and Congressmen in this category.

If the House subcommittee on Legislative Oversight thinks that, as a result of its disclosures and charges, it will be able to write a new law which will end influence peddling, it is already doomed to disappointment. Reforms like that have been tried without success since the Roman Emperor Marcus Aurelius.

We must face the fact that we have a government of men not laws—notwithstanding pious protestations to the contrary. Good men do not need statutory laws to make them perform honestly. Conniving men can always find a way around such laws, no matter how well intended.

The real problem is to get good men in office and keep them there. And it could be that Ike's "hound's tooth" has developed one or two cavities in the wear-and-tear of five years in office.

Soap Coupons and Car Fare

It probably had to happen sooner or later. But the contract recently announced between the New York City Transit Authority and the B. T. Babbitt Co. ought to give public utility companies of all kinds, everywhere, food for thought. The idea in a nutshell is to use soap coupons to buy rides on the city transit system. The promotion campaign starts July 1 and runs for the rest of 1958. The plan is to promote both the subway passenger business and the soap business. The slogan will be "Buy Three—Ride Free."

It is a big field as well as a clean-cut deal (no pun intended). Babbitt will give away soap coupons with every can of its five soap and detergent products, sold in the metropolitan area. Three of these coupons can be redeemed for a token on the subway system at any subway exchange booth or for a ride on any bus operated by the New York Transit Authority. In turn, the authority will collect five cents from the company for each coupon redeemed in this manner.

Babbit would not estimate what the cost of the project will be. But other sources have estimated that it will take at least one million dollars including the necessary advertising promotion in newspapers, radio, television, store displays, and other promotional publicity.

Michael J. Quill, president of the Transport Workers Union, which represents subway employes, was not too enthusiastic about it. "We are not going to work ourselves into a lather about this," Quill said, "but the authority should know that we will not be soft-soaped out of asking more money and additional time for the added duties placed on our members by this coupon plan."

Quill's dissent to one side, most other New Yorkers seem to be taking the new tie-in between soap and the subway in their stride. There have been some cynical suggestions that the tie-in could even be closer, considering the condition of some of the subway stations. (Babbitt also sells a deodorant.)

But it is doubtful if the plan will forestall the need for increase in the New York City subway fare from its present level of 15 cents for an indefinite period. The City Authority does hope that the program will win back, at only negligible cost, thousands of customers who have been lost in recent years. This customer loss has been due mostly to automobile competition and people moving into suburban areas not dependent on subway terminal connections.

But with the door thus opened to

(Please turn to page 63)

Long-Range Planning for Station Growth

When a telephone company does something "today," it should try to do it so it will fit in with what the company will have to do "tomorrow." Sometimes by looking ahead it will find opportunities to shape the future instead of waiting for the future to shape the company.

By F. E. NORRIS*

IT MIGHT help you evaluate my views if I told you something about my company. General Telephone is a system comprised of 14 major companies in 30 states, giving the kind of telephone service that is familiar to you. We have about 3,300,000 telephones and employ 49,000 men and women. The system has two factories in the Middle West. They make the apparatus we and many other non-Bell companies use. There is also a company which publishes and prints telephone directories. And there is a laboratory. We have factories in Antwerp and Milan for the foreign market and in Brockville, Ontario, for the Canadian market.

Our assets are a little over a billion dollars. About 70 per cent of our income is from telephone company operations.

My position as Vice President—Planning and Development is concerned chiefly with the telephone service companies.

We in the telephone industry historically have done long-term planning. This, however, came about more by force of circumstance and of engineering economics than from a recognition of the underlying value of planning as a distinct, formalized function.

At least 25 years ago, when most telephone connections were made by operators, it became apparent that with the growing popularity of the telephone there would one day not be enough girls to cover the switchboards. This, together with other economic and service considerations, led to deciding that manual should be replaced with dial switchboards. That job is about 85 per cent completed—and I doubt that more rapid progress could have been made. This is one example of what we have done.

Another example is that when we plan a new central office we forecast the telephones it will serve, by intervals, for up to 25 to 30 years. Not only that, we forecast future telephones by the sectors in the new office areas as well.

From this, we set up a fundamental plan calculated to meet future growth of the area with the least amount of wire. We refer to the process by which this is done as "locating the wire center." There are many instances in our business where, as in the latter case, we plan facilities for many years ahead.

*Mr. Norris is Vice President—Planning and Development of the General Telephone System. This is an address he gave before American Management Association Seminar on Long-Range Planning, recently held in New York City.

F. E. NORRIS

The idea in creating the Planning and Development Department, which is just a year old with us, certainly was not with the thought of centralizing in any way the many long-term planning functions inherently identified with departmental functions, such as the last example just given.

Beyond Technical Phase

Our motive looks beyond the ways and means of improving technical operations within departments. Departmental planning, measurement of their own results, and finding new ways to improve their techniques remain the responsibility of the respective departments, the same as before a planning department was set up. Anything but that would result in a division of responsibility and probably organizational chaos over the long-pull.

What then do we hope to accomplish with a planning department separate and apart from any of the regular functional departments? The best answer to this question, I think, is the statement my president made when he appointed me to the planning position. He said, in effect, "No one around here has time to think about anything except his own immediate and pressing problems. There must be better ways of doing things and opportunities which we are too busy to see. Someone should be freed of the 'today' problems and have some time to think about 'tomorrow.' That's you."

This clear definition of my new position has proven very helpful, for "long-term planning" means many things to many people. It would be surprising indeed if between us here today a wide variety of definitions did not exist. I know that *within* our organization there were at first many

different interpretations. This is understandable enough. The term, itself, is general rather than specific. And we as individuals have our own problems and ideas of what we hope a long-term planning department will do for us. This no more than emphasizes how desirable it is that there be a clear definition of the planning department, its limitations, what is expected of it, etc. Even with such a definition, some confusion is likely to arise. This interesting question, for example, arose with me.

Over how many years must a plan extend in order to qualify as a long-term plan? After much pondering it seemed reasonable to conclude that within the motives underlying the creation of the department, the qualification "long-term" is less dependent upon the length of time required to reach a goal than upon the underlying considerations of the idea at hand.

Laying out a "wire center" plan which will guide the kind and location of wires to be placed during the next 25 years, as mentioned a moment ago, is not a long-term plan as far as our planning department is concerned. Establishing wire centers is repetitive, long-term *facility* planning. As such, it remains in our engineering department.

Opposition To Change

On the other hand, a single *new* idea, one requiring top policy decision, may be a long-term plan even though the objective can be reached in five years or less. A new line of products, a new service, or new marketing philosophies may illustrate this.

These two thoughts might be summarized like this:

(1) A long-range plan is the acceptance of a goal toward which future activities will be oriented, and

(2) A plan qualifies as "long-term" more by its character than by the length of time required for its probable consummation.

There seem to be a few ideas which are *naturals*—ones where their worth is immediately apparent, which will be unaffected by traditions, where large capital outlays or potentially serious reactions will not be concerned. Such factors provide an area where opposition can manifest itself—particularly the kind of opposition that arises against any new idea that suggests a change in the old way of doing things.

New ideas frequently become quite involved and require of the planner an understanding or at least a consideration of complex operations. For this, more often than not, he must consult with those in the organization who are responsible for the respective operations. This, fortunately, affords an opportunity to accomplish several things. It tends to locate weak points in an idea, it identifies problem areas and probable solutions, and gives those who will be responsible for carrying out the plans a sense of participation.

Perhaps the most important thing produced by consulting with those who must carry the ball, and this occurs during the early planning stages, is that the practicability of an idea is tested. Not only that, these contacts can be used to develop an answer to the question of how the plan can be carried out. It is not likely to be up to the planner to say *how* an idea will be carried out but it is important for him to know that it *can be*.

This may require breaking the idea down into its components, if it is that kind of an idea, and finding out the implications of each component before presenting the over-all plan for acceptance. By components, I have in mind things such as the engineering part, the production part, merchandising, sales, pricing parts, etc. With the favorable consideration of each component the practicability of the over-all idea becomes better established.

Why A Program

Such detail considerations also will be useful in drawing up an *outline* for a program which probably will be needed if the idea is adopted. The "program" itself generally will be prepared by those responsible for carrying it out.

Why have a program?

For one thing, a plan to be useful must be specific and not a loose, generalized idea. Accordingly, one purpose of a program is to define precisely *what* is proposed.

A particular long-range plan may fall into the responsibility areas of two or more administrators. There may be some gray or twilight areas where responsibilities are not clearly fixed. The possibility of delays or confusion exist in these areas. These might be avoided by determining *who* is going to do what. This is another purpose a program serves.

A third purpose is to establish—and record for future reference purposes—*when* certain things are expected to be done, a time schedule, so to speak. While a strict time schedule, as such, is not likely to be practical, at the same time, unless the various administrative units are working toward the same gen-

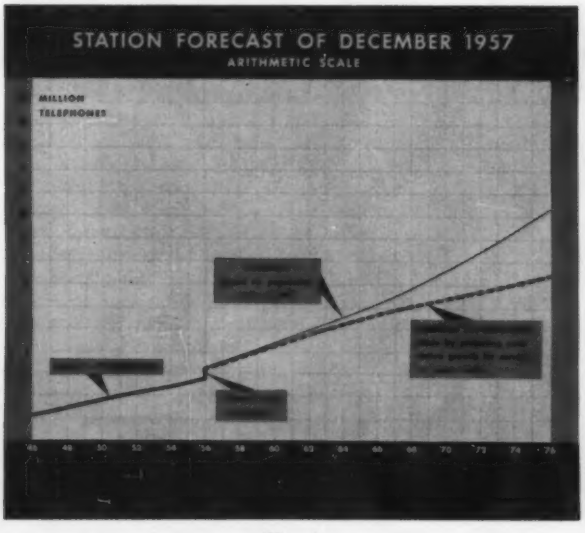


Fig. 1

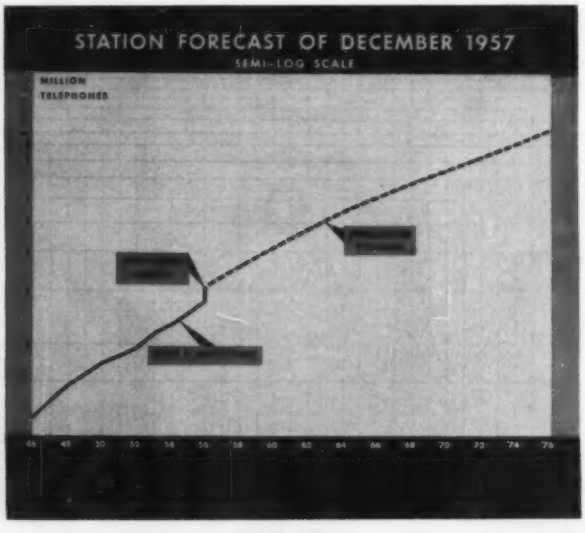


Fig. 2

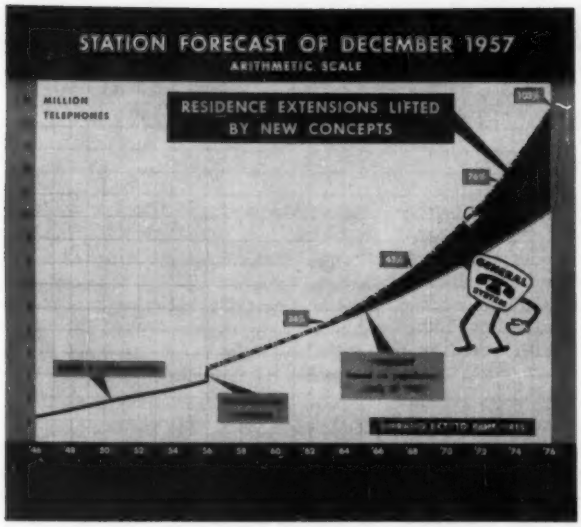


Fig. 3

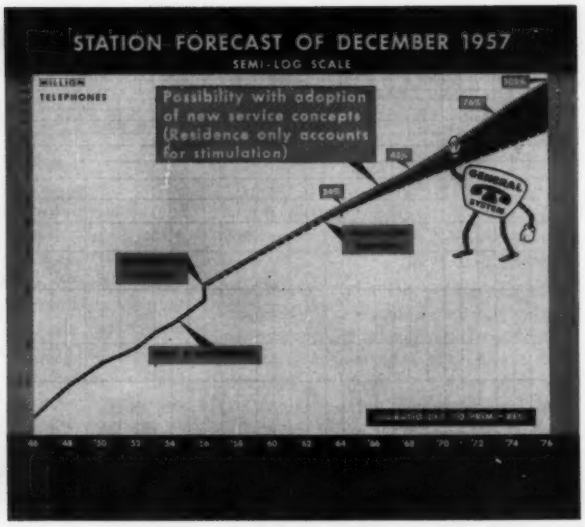

STATION FORECAST OF DECEMBER 1957
SEMI-LOG SCALE
MILLION TELEPHONES
Possibility with adoption of new service concepts (Residence only accounts for stimulation)
GENERAL SYSTEM

Fig. 4

eral date, difficulties are almost sure to arise.

In some instances, particularly if entirely new techniques are required, the matter of *how* certain things are to be done may be desirable for delineation in a program.

Of importance too, a program furnishes a means by which future progress toward the goal may be measured.

It might be appropriate at this point to deviate momentarily from a discussion of principles to an actual situation. The "plan" I'll briefly describe concerns our system as a unit. From some slides I have to show you, you will see the possibilities of measuring actual progress against expected progress on the time scale. The slides are from a number prepared for presenting to our executives the proposition that our potential telephone development is very much greater than we believed it to be. I'll not go into much detail. You can ask questions later if you wish.

During the postwar decade we grew, essentially from internal growth as contrasted to mergers, though there were some of them, from about 1.1 million telephones in 1946 to 2.7 million in 1956. In other words, General added one and one half times as many telephones in the 10 postwar years as it added in all its previous history—at least 50 years. We nearly broke our arms patting ourselves on the back for that achievement —and we should be justly proud.

Formalized Planning

Now, I wouldn't be so brash as to say that this huge development was without planning. That would be ridiculous. You have to do some pretty good planning to rack up that kind of a result —and, particularly, when you bear in mind the growth in capital appreciably exceeded the growth in telephones. But, we didn't do very much of the kind of *formalized* planning we are here to talk about in this seminar.

To judge whether we did as well as we might have when we increased our telephones from 1.1 to 2.7 million in 10 years, we asked ourselves as planners this question: "How many telephones should we have added as measured by the *potential* market?"

When we got the answer to that question we frankly were jarred. You will see why, I believe, when you see the slides. Let's take a look at the first one (see *Fig.* 1).

The solid line shows our actual performance for the past decade. With this experience our statistician made a characteristic projection. This is shown in the lower heavy dash line. You will see that a forward projection on a backward-look basis suggests we will have 7.3 million telephones in 1976—and I rather think that is somewhere near where we will come out if we continue to judge ourselves by the past.

To produce the dotted line of the same graph we developed population and household growth trends for the areas we serve. We determined the percentage of households having at least one telephone today. Then, on the basis of recent information we had, we estimated the percentage we think should have at least one telephone. We next asked ourselves how long it would take to achieve the higher objective density. With the answer to this the first step was completed.

For the second step, we determined of the households having telephones, the portion that have more than one—that is, we determined the ratio of extensions to main telephones. As in the case of household density we estimated the ratio of extensions to main telephones we believe we can achieve. And, as before, a timetable was set.

By increasing the percentage of households with main telephones and by increasing the extension to main telephone ratio we found we might develop 10.1 million—instead of 7.3 million telephones by 1976.

Note that this estimate is on an arithmetic scale. It makes the forecast look quite optimistic.

Employe Selling

The next slide (see *Fig.* 2) shows the forecast we just discussed—the 10.1 million in 1976 figure—but on a *semi-log* scale. Now, it doesn't look so optimistic.

To attain a development of 10.1 million telephones we have in mind such things as stimulated and new kinds of employe sales activities, professional publicity of various kinds, solicitations by expert sales people and merchandising in the modern sense of the term.

The next phase of the study stemmed from this question: If we can develop 10.1 million telephones by added effort, how many more can we develop with some brand new ideas or concepts for telephone service?

The next slide (see *Fig.* 3), answers that question.

This slide suggests that instead of developing either 7.3 or 10.1 million telephones we might develop 15.1 million by 1976. This is 4.6 times as many telephones as we had at the end of 1957.

The new concepts by which we believe

(Please turn to page 68)

Bell Cites Progress As Transistor Marks 10th Year

TEN YEARS AGO, 31 reporters from the nation's leading newspapers and magazines gathered at Bell Telephone Laboratories in New York City in response to an unusual invitation which promised a demonstration of "far-reaching significance in the field of electronics."

The speaker was Dr. Ralph Brown, then director of research for the Laboratories.

"Ladies and gentlemen," Dr. Brown began, "the Bell Telephone Laboratories wishes to demonstrate to you today a new device operating on an entirely new principle . . . it is an electrical amplifier . . . it will do just about anything a vacuum tube will do and in addition has unique advantages not possessed by vacuum tubes."

The unusual device was the point-contact transistor, and the occasion was the first public announcement of its invention. That press show was June 30, 1948, and it heralded what has come to be called the "new electronic age."

The new era owed its origins to the research work of three physicists—John Bardeen, Walter Brattain and William Shockley, all of whom were members of the Laboratories staff in 1948, and to the invention of the point-contact transistor by Brattain and Bardeen.

The importance of the transistor and the research on semiconductors was underscored in 1956 when Brattain, Bardeen and Shockley shared in the award of the Nobel Prize in Physics.

The transistor performs in a solid material what the electron tube does in a vacuum. Both devices amplify and oscillate, but there the resemblance ends. The transistor has no grid, no heated cathode—it operates cold.

The device meant new ways to build electronic circuits, offered a small but rugged substitute for tubes, pointed toward "packaged" and miniaturized components, and functions without large and inefficient expenditures of energy.

In the decade since the announcement of the invention, the growth of transistor technology and the development of new transistors has been phenomenal. It has been said that the transistor spanned in 10 years the development achieved by the electron tube in 40 years, but of course a part of that progress is owed to the backlog of tube technology.

Early uses of the transistor in the Bell System included point-contact transistors at work in tone dialing equipment, and in the "card translator" for the automatic routing of long distance calls.

The low power needs of the transistor offered new ways to improve rural telephony and the opportunity was quickly seized. Transistors are expected to play an important part in electronic switching systems, performing interconnection functions with speed and ease.

Diffused base rectifiers, voltage regulators and lightning protectors, using techniques evolved from transistor development, have become standard in telephone apparatus and power systems.

In the new field of data processing —where business machines "talk" to their counterparts across the continent —transistorized devices have an important function. The "Dataphone," for high speed transmission of business data over telephone lines, is one of the electronic instruments relying on transistors for efficient performance.

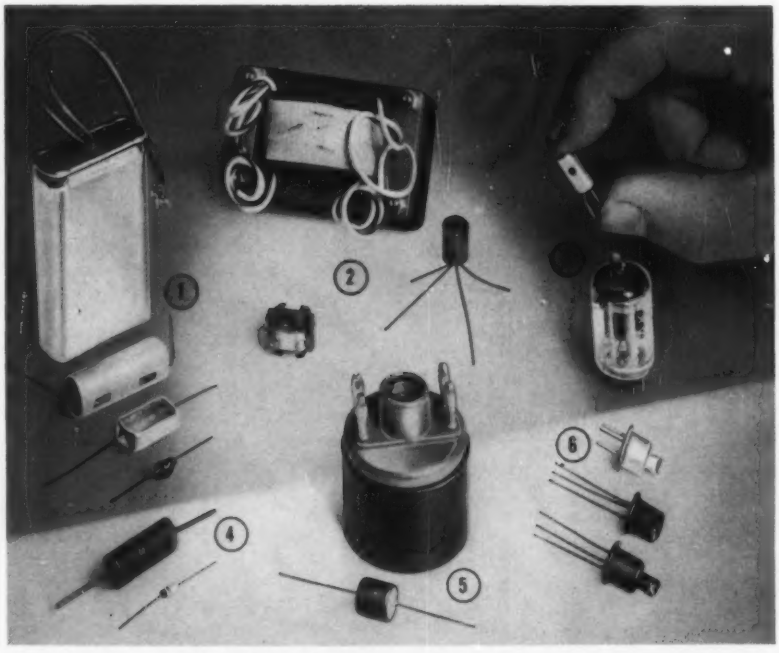
The military services were among the earliest users of the transistor. Shortly after the announcement of the invention, Bell Laboratories and the military initiated a joint program to develop transistors and circuits for military needs.

One of the dramatic uses of transistors designed by Bell Laboratories was in America's space satellites. Transistors in the "Explorer" and the "Vanguard" satellite transmitters relayed to earth the data sought by scientists.

Commercially, transistors have found their way into a wide variety of equipment. A partial listing of transistorized devices includes: hearing aids, radios, fuel injection systems, portable TV sets, phonographs, paging receivers, electronic instruments, computers, machine tooling controls, clocks, watches, toys and even a guidance system for a chicken-feeding cart.

Transistor technology even has infiltrated medical research. Massachusetts General Hospital has in experimental use a tiny transistor amplifier to "step up" or amplify the heart beat of patients making a post-operative recovery. In another medical experiment, a transistorized device succeeded in help-

(Please turn to page 76)



Electronic components miniaturization, made feasible by the transistor, is illustrated by comparative sizes of units in the above photo. The components include: (1) capacitor with three miniaturized units; (2) transformer with two transistor circuit models; (3) typical vacuum tube compared with point-contact transistor in case; (4) resistors; (5) inductors; and (6) three recent production models of transistors.

TELEPHONY'S Traffic Engineering Handbook

By Gilbert R. Brackett **June 21, 1958**

Section 19

Managing Peak Holiday Traffic—Toll

As most of us realize, there are more long-haul and switched toll calls handled on holidays than on business days. Christmas Eve, Christmas Day and Mother's Day are good examples.

What we don't realize is that the greatest increase in volume either originates or terminates at small or medium-sized offices serving small towns or suburban communities. This brings about a problem, as most of the traffic concentrates over routes which are engineered for normal usage.

Circuit congestion results and traffic is backed up at the major switching centers. Because of this excess load there are many circuit delays, more increased attempts, more AG requests, more switching, more digits to be dialed, more checking of unfamiliar routes, and a higher percentage of address name calls, all of which adds to the work time per call.

To care for such peak holiday traffic careful planning is in order. The fullest inter departmental coordination is called for, if adequate circuit and position facilities are to be provided. All equipment must be maintained at its highest possible level of efficiency. Circuit and routing rearrangements must be worked out.

Operating forces need to be trained and must stay within bounds of prescribed practices. At the same time good public relations must be maintained. Because of the delays and lowered completion, emphasis should be placed on courtesy and attentiveness.

Routing changes usually are necessary for the holiday period due to circuit rearrangements. Loads must be kept in balance. However, routing changes should be kept at a minimum and carefully weighed against the operating disadvantages that occur when unfamiliar routes, changes in reference materials, and physical rearrangement of toll plant take place.

During the holiday rush it is imperative that adequate bulletin information be provided to indicate points that may be reached over new circuit groups that are assigned to aid in speeding traffic to its destination. The operating forces must also be trained on how to use this information quickly and accurately.

It would be well to provide information material at outward positions, route desks, and delay quoting positions if there are any. New circuit groups, their TX locations and any related posted delay information should be listed on these bulletins.

To see that the additional circuits are being effectively used, frequent checks by supervisory people should be made. Ineffective use could bring about lost revenue, tie-ups and increased congestion.

There is but one objective behind a circuit division plan: to relieve those switching centers which have proved to be the main bottlenecks during holiday traffic peaks.

Experience has taught us that if the most is to be gotten from the circuit division plan, management should understand circuit divisions are for an entire holiday period. They are not to be changed except in the case of emergencies such as storms or other disasters.

The main differences between normal day and holiday practices are:

(a) Circuit requests are not to be left at the expiration of two hours or any other time interval.

(b) OTC operators will not reach intermediate or inward operators on calls which the originating operator can dial.

However, such differences will not apply and regular practices will be put into effect when:

(a) The call is an emergency.

(b) The party reaches a wrong number.

(c) A cutoff is to be restored.

(d) There is a request for a better connection.

Of course, the primary purpose of division in favor of major switching centers is to assume that a "no delay" circuit will be available to permit switching on all calls which have already advanced to that point.

In view of this circumstance, it is important that each office involved in a circuit plan use only the circuits assigned to its respective subgroups for all purposes, even though there may appear to be idle circuits in the subgroup allotted to another office.

Operators must be careful. Should they plug in over a busy indication signal on a dial circuit the circuit will be locked up and out of service until it is manually released by plant personnel.

On divided circuits, when inward answers are slow, it is particularly important to avoid "circuit jumping." Should a dial circuit be in use, an answer at an inward or through position, after the toll circuit has been released by the originating operator, also will bring about a "lock-up" condition.

Because these two faults do happen occasionally it is strongly recommended that adequate plant testboard coverage be provided on busy holidays so that prompt clearance of all "lock-up" cases may be made without delay.

No circuit requests should be written during the program for switching center relief, except in cases of emergency, and only then when it is recognized by the OTC operator as such.

Through operators should not accept circuit requests if ordered on holiday traffic. Should an operator attempt to leave a circuit request on a call not recognized as an exception condition, the inward operator can reply, "We are not accepting circuit requests today."

(Section 19 will be continued next week)

Merchandise and Sell, Illinois Convention Told

By R. C. RENO

THE need for all telephone companies to inaugurate plans for the merchandising and selling of telephone service was emphasized at the annual convention of the Illinois Telephone Association, which was held on May 21 and 22 at Peoria.

In his annual report, Association President W. R. McGrew of Park Ridge stressed the point that if telephone companies are to get their fair share of the consumer's dollar in the future, they must put forth an all-out effort to sell additional services and facilities.

Going hand-in-hand with a successful merchandising and selling program, is a concentrated effort to build and maintain good public relations, through the rendition of good and adequate service and proper treatment of the public, Mr. McGrew stated. Good public relations will have a great influence on the success of any program to bring about increased sales of service, he said.

The subject of merchandising was also discussed in an address, entitled "Selling for Profit," by O. W. Tuthill of Chicago, general manager-merchandising of the Illinois Bell Telephone Co.

"In the increasing competitive era ahead, when business will be harder to get and growth harder to achieve, there will be a greater-than-ever premium on efficiency, imagination, and down-right hard work, aimed at giving the customer the most value for his dollar. Selling for profit will be the big challenge," Mr. Tuthill prophesied. He continued:

"Although growth patterns are changing and competition for the consumer's dollar is more intense, long-range economic prospects are good. While, as we all know, production has fallen, needs for more goods and services are accumulating. In the next 15 to 20 years, it is likely that the whole economy will nearly double. Average purchasing power will greatly increase, including the public's ability to buy more telephone service.

"If we are to capture our share of the customer's growing purchasing power, however, we must understand changes in customer ideas as they will relate to telephone service. We must anticipate his wants and needs in this changing world. Good telephone service in 1957 won't be good enough in 1975.

"Also, we ourselves must help to create changes in customer ideas."

Stating that telephone companies must help create changes in customers' ideas as to telephone service, Mr. Tuthill said:

"The public won't always know what it wants, but it will always want something that's really better.

"Providing something that's better, creating a desire for it, and selling it at a profit is what we call 'merchandising.' Merchandising also includes the process of making our existing equipment more profitable. Telephone equipment must be ready to serve at all times, and this means that there will always be many hours during which substantial portions of our equipment are sitting idle and unproductive. Developing ways to make it more productive during these periods is a major function of merchandising."

Mr. Tuthill listed five major reasons why merchandising and selling is good policy, as follows:

(1) It can help a telephone company make a profit.

(2) It helps keep the company alert and on its toes. A business that's on its toes to make a sale will be alert and progressive in other ways, too.

(3) Good selling is good service. The whole idea of merchandising is to provide the customer with something better for him that's also profitable for the company.

(4) Customers like telephone companies to sell. It's good public relations. It indicates a company is interested in its customers and wants to help them get the most from their service.

(5) A well-administered merchandising and selling program is good for employe morale. Participation is a magic word of success in almost every endeavor, and selling gives employes a participating role and a sense of accomplishment.

In closing, Mr. Tuthill said:

"Like it or not, we cannot avoid being affected by economic changes in the world around us, whether it is the recession of today, or other problems in the years ahead. Nor can we ignore changes in customer ideas and wants. These changes make a merchandising approach for our industry a necessity if we are to compete successfully for our share of the public's purchasing power.

"Merchandising, in turn, helps us provide better service for our customers. It keeps the business alert and progressive. And it helps the business economically because good merchandising means that we are selling for profit."

Mr. Tuthill's address will be pub-

Officers and directors of the Illinois Telephone Association. Back row, left to right: K. L. Schroeder of Freeport; A. T. Renn of Chicago; W. R. McGrew of Park Ridge; Gordon Aller of Chicago; Ben B. Boynton of Springfield; M. A. Kugler of Okawville; Donaldson Coombes of St. Louis, Mo., and J. G. Hardy of Springfield. Front row, left to right: Burton W. Saunders of Springfield; Daniel Schaefer of Sycamore; Roland Schmidt of St. Jacob; Clive W. Haas, president of USITA, Big Timber, Mont. (guest); R. W. Britt of Springfield; Ray J. Alter of Galesburg, and Russell Logue, of Casey.

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These two groups were photographed at the Illinois convention. LEFT PHOTO, left to right: J. L. Buford, superintendent of schools, Mt. Vernon, Ill.; M. A. Kugler of Okawville, Ill.; and Cyrus J. Colter, member of the Illinois Commerce Commission. RIGHT PHOTO: Harry A. Joslyn (left) of Sycamore, Ill.; and Ben B. Boynton of Springfield, Ill.

lished in full in a forthcoming issue of TELEPHONY.

Clive W. Haas of Big Timber, Mont., president of the United States Independent Telephone Association, also emphasized the need for merchandising and selling programs, and he told the representatives of small companies that just because their companies were small there was no reason that they could not institute such programs.

"Every manager and employe of a small company can be just as good a salesman as the personnel of large companies, and they probably are in a better position to sell because they know their customers and prospects more intimately than do the people in large companies," Mr. Haas said.

Merchandising and selling additional services is one sure way for small companies to increase their revenues and earnings which most of them so sorely need today, he stated.

In one of the feature addresses of the convention, Cyrus J. Colter, member of the Illinois Commerce Commission, described a regulatory commission's feeling towards a company that has efficient management and operation and renders good service.

"When a company bears a good reputation with the public, a commission, at a time when it is beset by other complex problems, naturally views with great satisfaction the record and standing of the company and has a desire to see it do well. The commission will do all it can to see that the company does well, because it is fulfilling its mission, namely, rendering good telephone service to the public," Commissioner Colter said.

On the other hand, he stated that it has been his experience that a company which has inefficient management, and whose service is below standard, is also a company that must be watched on other matters as well.

Generally, Commissioner Colter said, its books and records are not properly kept and its reports to the commission are not filed on time, or when filed, are not properly prepared. He stated that he was attempting to show that a company's shortcomings in these respects go beyond failing to render proper service to the public and go into the area of inefficient operation, generally. This is bad, he said, because a commission's confidence in the efficiency of a company's whole operation is shaken.

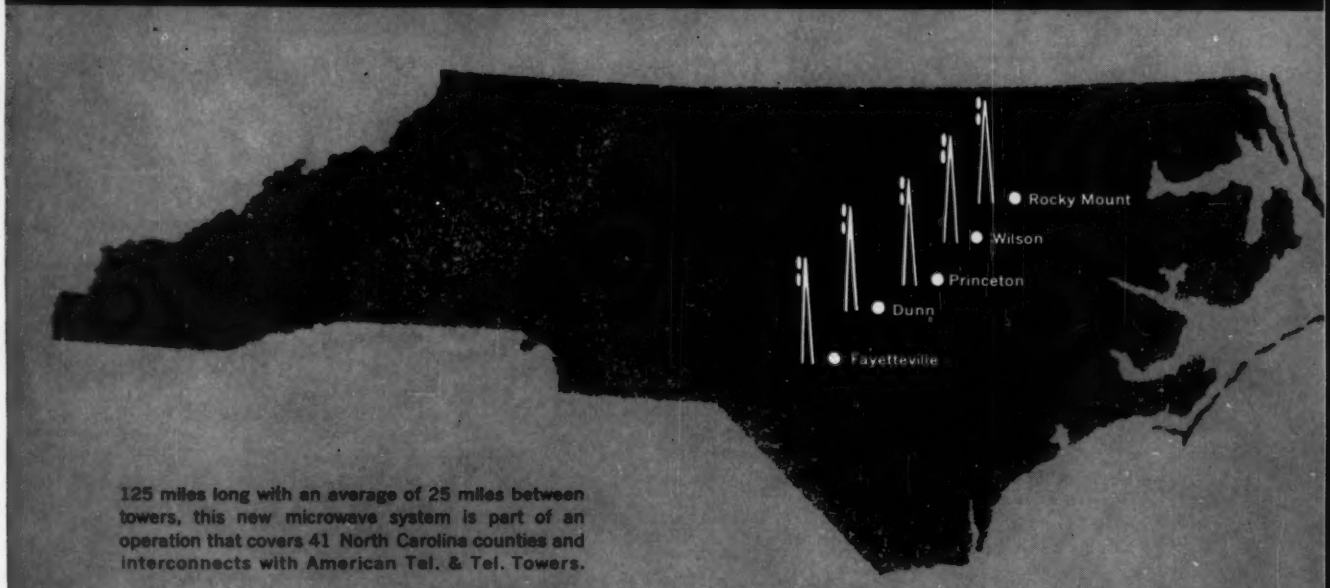
"The commission, in this kind of a situation, has got to be dispassionate and philosophical, realizing that a small minority of poor operators will

(Please turn to page 64)

Newly-elected officers of Illinois association. President-elect K. L. Schroeder (left) of Freeport and Daniel Schaefer of Sycamore, vice president.

This foursome, attending the Illinois convention, are left to right: Earle Gibbs, assistant telephone engineer of the Illinois Commerce Commission; Ed Melcher, telephone engineer of the Illinois commission; W. R. McGrew of Park Ridge, and J. C. Hardy, secretary of the Illinois Association.

Progressive telephone company expands microwave service with five more Blaw-Knox towers



125 miles long with an average of 25 miles between towers, this new microwave system is part of an operation that covers 41 North Carolina counties and interconnects with American Tel. & Tel. Towers.

Erected by the Radio Construction Company of Pittsburgh, these Blaw-Knox Microwave Towers range from 150 to 250 feet high, and are built to handle additional antennas as service is extended.

Carolina Telephone and Telegraph Company have just installed their second microwave system since 1954. The new five tower section simplifies future expansion and permits the addition of hundreds of circuits at diminishing circuit cost.

Constantly extending and improving customer service, this company has nearly tripled its services in ten years to now serve nearly 150,000 telephones.

Today, as in 1954, Blaw-Knox Microwave Towers provide the dependable structures needed in an area where hurricanes have occurred in recent years. Located in a section where wind velocities have reached 100 miles per hour, Blaw-Knox Towers help maintain continuous service necessary for good customer relations.

A microwave system may be the cost cutting answer to your own expansion plans. For details on Blaw-Knox tower engineering, design, fabrication and erection services, write for Microwave Tower Booklet 2538.

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Tomorrow's Telephone Subscribers Tour Minnesota Exchange

By STEPHEN HALVORSON*

IN PLANNING "open houses" in connection with conversions to automatic operation, more and more telephone companies are recognizing the importance of conducting exclusive tours of converted exchanges for school children—the "telephone subscribers of tomorrow."

Experience of most companies in this activity shows that children have a definite interest in seeing what "makes their telephone tick" and, above all, they show great appreciation that a local business is interested in devoting time and attention in their behalf.

Our company, Minnesota Telephone Co., held such tours for school children after our International Falls exchange was converted, and we recommended that all telephone companies—large and small—schedule tours exclusively for school children when they observe their cut-overs to automatic operation. Perhaps a recitation of our experience will be helpful to other companies in planning such tours.

At the time of our open house, primarily held for adults, in conjunction with the conversion of the International Falls exchange, we asked the rural

STEPHEN HALVORSON

schools not to bring students at that time, but to make arrangements for classes to be conducted through the exchange following the open house.

We did that for two reasons—one to allow more adults to see our exchange and, secondly, we felt we could spend more time and explain the exchange better to the students if we could show them through at our leisure.

During the past two school years, we estimate that we have conducted more than 600 students through our main exchange. These have been children from the second grade through, and including, junior high school. Classes have come from over 50 miles—from towns not even served by our company—to make the tour. We try to limit the tour groups to about 30 students, dividing these into two units with a COE man as a lecturer and guide for each group.

A typical trip through our 4,000-station International Falls exchange starts with an introduction of the COE man to the students, and a word of caution to the students not to touch the equipment for their protection and ours. They are then shown the toll and local test boards with a brief explanation of their operation. We next progress into the power section, giving a rundown as to the uses and needs of the batteries, chargers, ringing machines

(Please turn to page 61)

*Mr. Halvorson is manager of the International Falls exchange of the Minnesota Telephone Co.

Members of a fourth grade class view "hands-free" telephone and automatic central office equipment at International Falls (Minn.) exchange. Teacher Helen Robinson is in the background of both photos. Showing the "hands-free" telephone is Robert C. Roxin of the Minnesota Telephone Co., and explaining the central office equipment is COE Supervisor Leo Cassibo.

I HAD THE BOSS UP A POLE...

"He knew all about the operating advantages of polyethylene coated wire . . . but I took him up and showed him why I liked it and why it's saving the company even more money than he figured."

In the past 12 years polyethylene covered line wire and cable have chalked up outstanding service records for utilities. But some of the best reasons for using polyethylene coatings don't turn up in operating statistics —they come from the men whose job it is to install and maintain the lines . . . Reasons such as these:

Polyethylene Is Easier to Install

It's free stripping, yet has excellent adhesion and will not ruffle over cross arms. It's clean to work with and its surface is "slippery" too. Polyethylene coating is lighter than other types of covering . . . it handles easier.

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Polyethylene forms a complete and permanent covering over line wire. That means fewer outages from contact with trees, wind-blown swinging wires and foreign objects. Smaller diameter polyethylene coatings offer less wind resistance above ground. Lighter weight can be an advantage, too, in ice storms.

In field servicing . . . in over-all performance and service life—polyethylene has proved its superiority in wire and cable applications such as these:

- Line wire covering
- Power cable dielectric
- Tree wire covering
- GTO (Neon Sign) Cable
- Coaxial Cable
- WD-1 Infantry Field Wire
- Control cable insulation and jacket
- Communication cable insulation and sheaths
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THE Plant Man's Notebook

BY RAY BLAIN, TECHNICAL EDITORIAL DIRECTOR

"THE PLANT Man's Quiz," in the May 10 issue of TELEPHONY, answered a question on the comparative merits of mechanical or refrigerant, and absorption or desiccant types of dehumidifiers for use in an unattended telephone exchange.

We quoted REA specifications and now we are called to task by Robert Eddy, engineer of that organization and a long-time friend of the writer. We used the word "absorption" and Bob now informs us that this applies to the calcium chloride method of dehumidification. What we should have said was "adsorption" which means the desiccant type. Anyway, we used the word "desiccant" which indicates our intentions were good. This attention to detail, we believe, clearly denotes the thoroughness of the REA engineers in their work. Even one wrong letter means a lot to these boys. In other words, they insist on everything being letter perfect.

•

On an automobile trip down to the eastern shore of Maryland recently, we noted that some of the glass in outdoor telephone booths is being replaced with metal panels. In some booths, only the bottom row of glass has been replaced by metal, while on others, the two lower rows are replaced. In some, the glass in the door extends to the floor, while in others, the lower-door glass has been replaced with metal. It would appear that this action should reduce materially glass breakage by vandals.

•

Something new has happened in the telephone industry out in California and it appears to be a very good idea.

An estimated TV audience of 458,000 went on an armchair tour of the new Bakersfield central office of the Pacific Telephone & Telegraph Co., just prior to the time it was cut into service.

In the opening, viewers were welcomed to the show by a lecture-demonstrator who explained DDD (Direct Distance Dialing), and demonstrated the direct dialing of a transcontinental call. CAMA (Central Automatic Message Accounting) and information service were also discussed. A call was dialed to Chicago weather service. The weather recording was broadcast to the viewers.

The cameras were next switched to the equipment room for a demonstration of the automatic recording equipment. Here, the more intricate operation of direct distance dialing was explained.

Next, the scene was switched to the third floor where the chief operator explained her department's functions. This was followed by a flash-back to the equipment room for a last-minute coverage of pre-cutover operations. The program was concluded with a clip from a company film, "Sounds Familiar."

There is no doubt that this is an excellent public relations idea for any telephone company having a local TV station that can be utilized for this purpose. Such an arrangement appears even better than an open house as more people can be reached and they are certain to understand more. This understanding should result in their having a higher regard for their telephone service and for the company that furnishes it.

•

An article in *Reader's Digest*, reprinted from *Real*, describes the 6,000 telephone answering services in this country, with their million and a half subscribers. New York has about 400 such services, Los Angeles some 150, Chicago 196, Philadelphia 101, and Boston 131. In Canada, the number of answering services has increased fivefold in the last decade.

In most cities subscribers can buy 24-hour, seven-day-a-week answering service for about $20.00 a month, of which approximately $2.50 goes to the telephone company for an extension from the line to be answered to the answering service office. Daytime-only answering costs less; lengthy messages, and messages in excess of 100 per month cost more. Subscribers specify whether their telephone is to be answered by name or by number, and how the messages are to be handled.

Big business firms use answering services after hours, and for small businesses they often are a combination of telephone, secretary, and office. Sears, Roebuck & Co. uses 102 answering services across the country to take COD catalog orders. The Barbizon-Plaza Hotel in New York City has answering services in a score of cities to take reservations for it.

The father of the answering service is believed to be George M. Bonham, of Peoria, now retired. In 1913, Mr. Bonham, then a 25-year-old employe of the telephone company in St. Joseph, Mo., recognized the need of physicians for answering services.

•

It is claimed that instead of two cars in every garage, what we need these days is two garages for every car.

•

Aerial platform towers are now for heights up to 100 feet. This device is ordinarily used to place men in difficult-to-reach locations so that they can work safely and efficiently. A new use has recently been devised for this equipment.

It has proved ideal for scouting and making tests over proposed paths for new micro-wave relay systems. The antenna dish is mounted to the end of the elbow tower on the personnel basket. The dish is then elevated and the path tested. When the correct height has been determined, the permanent tower can be engineered to meet the requirement. This device has also been used to advantage for temporary television pick-ups.

Hard to Please

by John Voss

Remember the old vaudeville days? This was an era of great entertainment—and tremendous variety. You could go to one performance and see everything from impersonators and performing dogs to magicians and knife-throwers. And, of course, you could always count on seeing acrobats.

Well, as vaudeville was pushed aside by movies, many performers were hard put to it to find work. For example, there was one particular acrobat who kept making the rounds day after day, week after week, but wherever he went he got the same story: they weren't booking acrobats any more.

So he decided to develop an act so unusual that nobody could turn it down. He worked and practiced for months, and finally his new act was ready. Full of confidence, he went to see a leading theatrical agent. He breeezed in to the agent's private office, threw open the window, and said, "Watch this!"

The acrobat then proceeded to *fly*. Flapping his arms like a bird, he flew up to the ceiling and swooped around the room a few times. Then he zoomed out the open window, did some fancy aerial stunts, dived back into the office and landed neatly right in front of the agent's desk.

The agent, not even bothering to look up, said, "So what else can you do besides bird imitations?"

I guess this agent was just harder to please than most. But his attitude sort of typifies an important part of our business philosophy at Stromberg-Carlson.

You see, we make a point of being very hard to please about *our own products*. Obviously, there are good dollars-and-cents reasons for this. We wouldn't keep our position of leadership in a highly competitive industry unless we made sure our products meet the highest standards.

But there's a lot more to it than dollars and cents. There's a pride of workmanship that simply can't be measured in terms of money. It's a Company attitude that goes back to 1894, when Mr. Stromberg and Mr. Carlson founded the firm with the intention of making a better telephone than any made at the time. This goal has been translated into our slogan of today: "There is nothing finer than a Stromberg-Carlson."

To live up to this philosophy, we maintain absolutely rigid standards of quality. I wish I could take all of you on a personal tour of our plant so that you might be able to see this for yourself. Then you'd know at first hand how we make sure that every product you buy from us—from the smallest relay to the biggest XY® Dial switching system—measures up to the standards we have set.

I'd like to show you our complete facilities for visual, mechanical and electrical inspection . . . our Department of Quality Control, organized and staffed for top-level supervision of quality . . . our elaborate system of exhaustive field tests for new products. In short, if it's humanly possible to determine in advance how a product will perform in actual use, we do it.

We certainly demand more than "bird imitations"!

John H Voss

Vice President and General Manager
Telecommunication Division
STROMBERG-CARLSON
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Rochester 3, N. Y.

ADVERTISEMENT

"Boothmobile" Service New Concept

"Boothmobile" unit attached to truck, ready for move to desired location.

THE MIDDLE States Telephone Co. of Des Plaines, Ill., is now offering the public a new concept in telephone service with outdoor booths on wheels.

Two outdoor Alcoa paystation booths are permanently mounted on a specially built trailer that makes them available for immediate use. Middle States intends to use its "Boothmobile" at football games, carnivals and other special outdoor events. The unit will also be used in disaster areas where normal service has been interrupted and immediate temporary service is needed.

The "Boothmobile" can also be set up temporarily in certain areas to determine if revenue warrants installing permanent paystations.

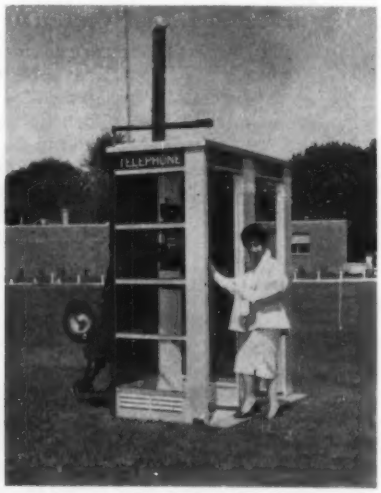
The two booths are mounted horizontally on a steel platform trailer for safe easy towing. When ready for use, the booths can be raised to an upright position with a small hand-crank and winch that is part of the trailer. The trailer's third wheel acts as a jack for raising the two booths upright and also is a stabilizer to keep the booths from being pushed over backwards when in use.

The unit is designed so that one man can easily set it up for use at any desired location.

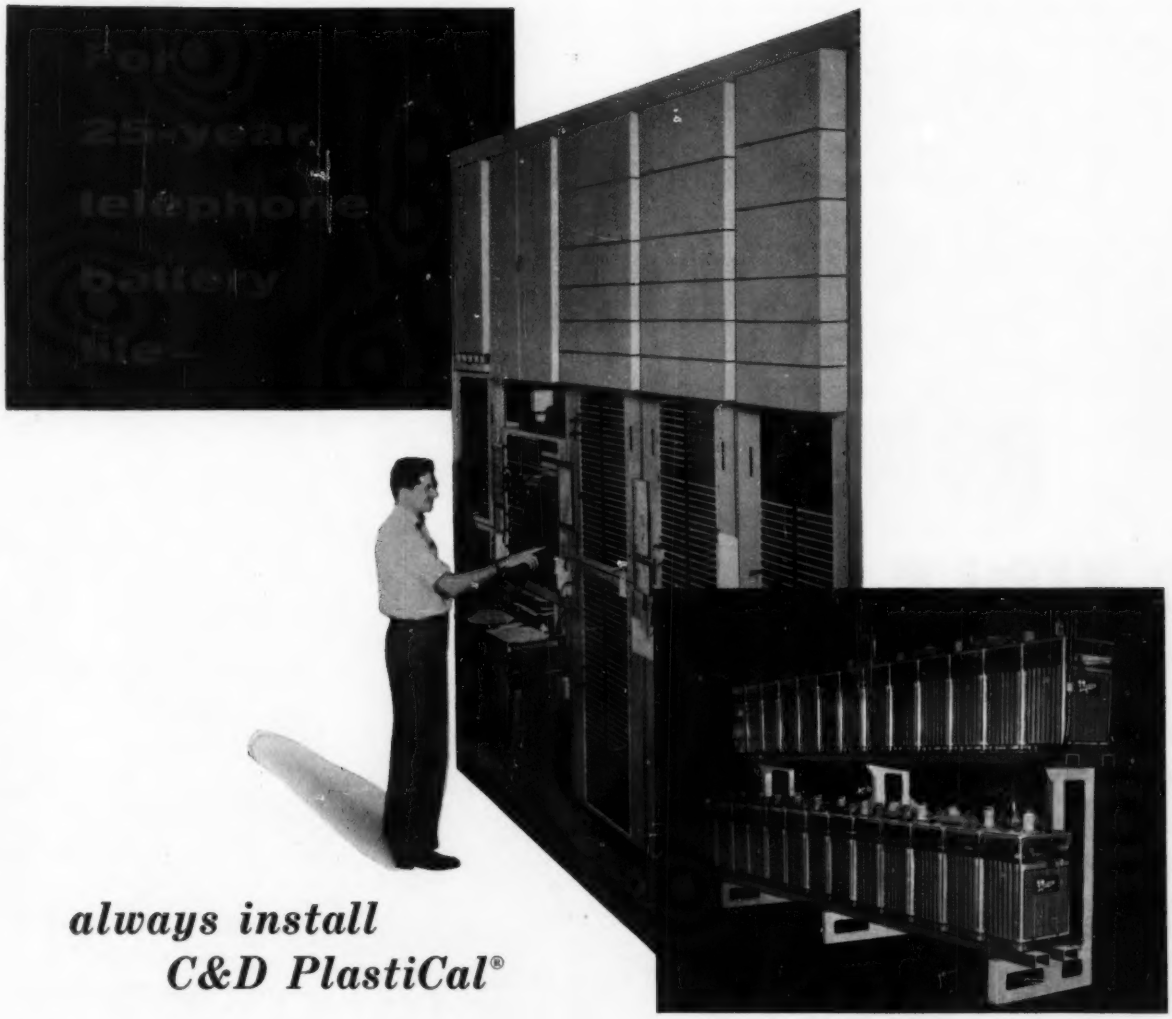
A new tandem roof by Alcoa provides a single roof cover and allows the booths to be butted together with no space between. Power and telephone wire junction boxes are mounted to the back of the booths to facilitate quick installation. Station protectors are also mounted to the rear of the booth and "J" hooks are attached to the drawbar of the trailer which can act as a mast for both power and telephone drop wires.

The total weight of the completed unit is approximately 1,400 pounds. The entire "Boothmobile" consists of the specially built trailer and two Alcoa booths. Canvas cover for the "Boothmobile" is optional.

The "Boothmobile" is distributed exclusively to the Independent telephone industry by Leich Sales Corp., 427 W. Randolph St., Chicago 6, Ill.



LEFT AND CENTER PHOTOS: After the trailer, to which the booths are permanently mounted, is detached from the truck, it is raised to an upright position with a small hand-crank and winch that are parts of the trailer. The trailer's third wheel acts as a jack for raising the booths to an upright position and also as a stabilizer to keep the booths from being pushed over when in use. RIGHT PHOTO: Booths in an upright position ready for use.



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PlastiCal lead-calcium alloy grids are completely free from the harmful life-shortening effects of antimony found in conventional telephone batteries. By comparison, a C & D PlastiCal requires from 1/10th to 1/100th the current to maintain itself in a fully charged condition. Thus, frequency of water additions is drastically reduced.

A PlastiCal in the battery room means you can check the electrolyte level by glancing at the clear plastic case. Patented, exclusive C & D Saftee-Vents reduce maintenance by serving as always-ready, efficient funnels for temperature and hydrometer readings—*without* removing the vent.

If you need telephone batteries—a C & D representative or your telephone equipment supplier will be glad to explain the many advantages gained by installing C & D's premium telephone battery—PlastiCal. *Call him today!*

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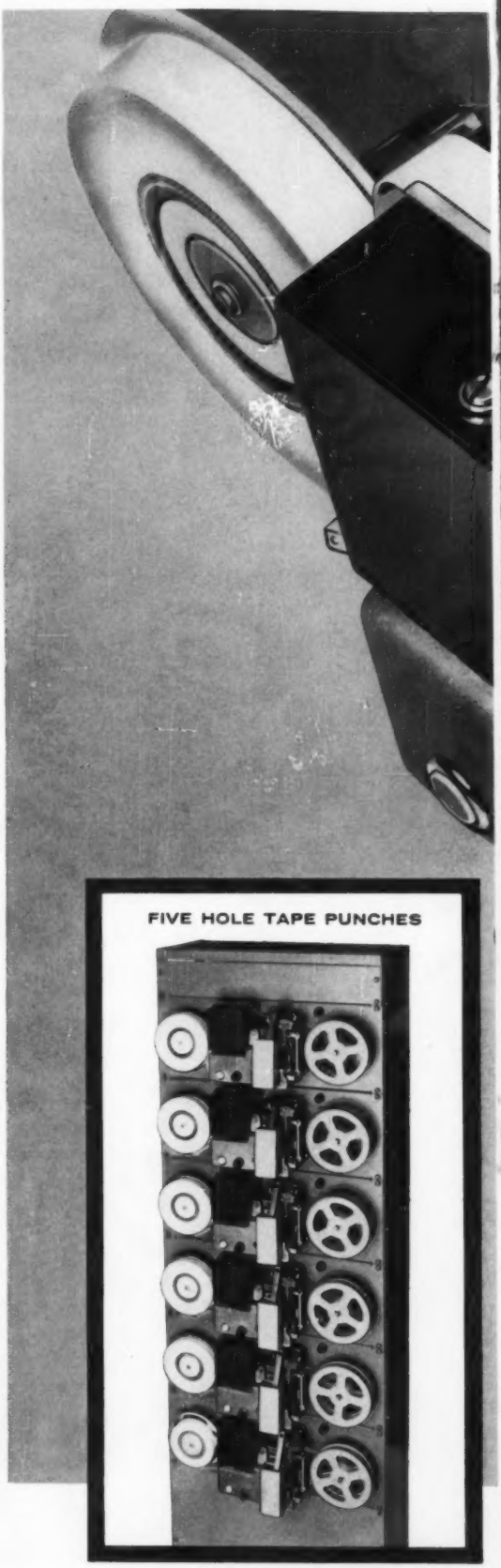

FIVE HOLE TAPE PUNCHES

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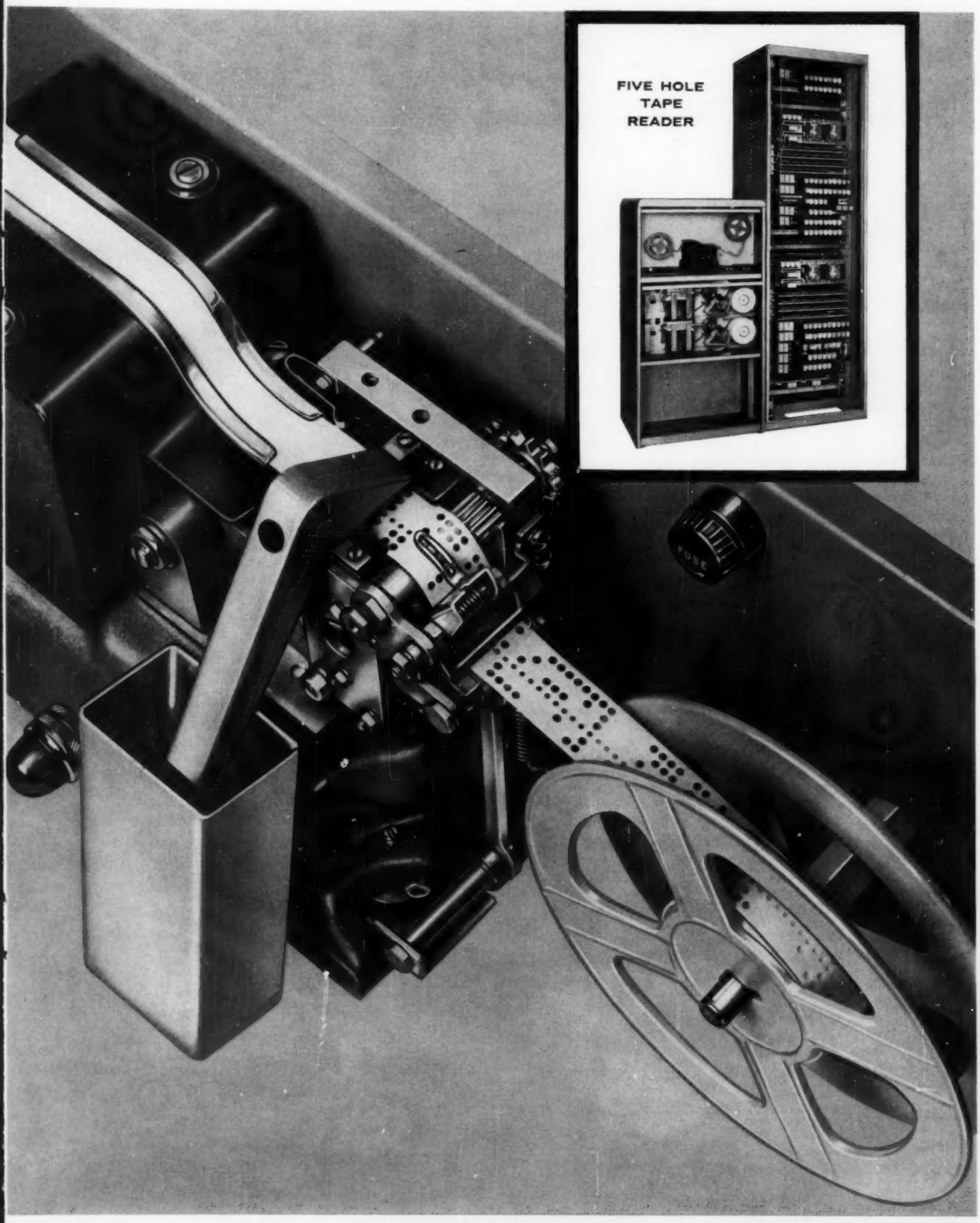

FIVE HOLE
TAPE
READER

Wisconsin Association Hears National Affairs Specialist

By Dan S. Fargo

FROM THE OPENING day's REA Borrowers Conference and Men's Golf Tourney till the closing workshop conference on plant and commercial-accounting matters, the Wisconsin State Telephone Association's 48th annual convention was full of rewarding activity for interested telephone men. The meeting convened on May 13, 14 and 15 in Milwaukee.

A program highlight was the talk by Merryle Stanley Rukeyser, of New Rochelle, N. Y., corporate business consultant, economist, columnist, author and analyst of national and world affairs. Mr. Rukeyser dealt with economic and political problems faced by the United States and the telephone industry and advanced a number of solutions and suggestions (see below).

Wyman W. Wiswell of Elkhorn, association president, in his report traced the financial history of the industry, stating, in conclusion, "In view of the financial success of the telephone industry, it is worth observing that capital couldn't have been attracted into the industry unless there was reasonable assurance that the money wouldn't be dissipated, but would earn a fair return."

Mr. Wiswell also observed that whereas rates for service have risen modestly, the value of telephone service has climbed 100-fold. He added: "Who would have thought that a subscriber in 1958 could reach 64 million telephones in the United States." He also said there are over 1.3 million telephones in Wisconsin or more than one telephone for every three persons.

On the topic of regulation, Mr. Wiswell said he believes regulatory authorities must encourage telephone company managements to plan, build and expand to be ready for future increased demands.

"This Matter of Public Relations" was discussed by Mack Kehoe, manager, community relations and publicity, Miller Brewing Co., Milwaukee. He quoted Webster's definition of public relations —"the activities of an industry, union, corporation, profession, government, or other organization in building and maintaining sound and productive relations with special publics such as customers, employes, or stockholders, and with the public at large, so as to adapt itself to its environment and interpret itself to society." Mr. Kehoe added that public relations is also a state of mind. In general, its functions are (1) to increase sales of the product or service, and (2) to prove the company is a good neighbor.

Ways of upgrading a company's public relations and Mr. Kehoe's commentary are as follows:

Analyze community relations which exist at present—what people like about you and what they dislike.

Maintain good employe relations. If you have a deep interest in the employes' welfare, this attitude will be communicated by the employes to the community.

Hold open house periodically. Few public relations activities are as effective as this one.

Contribute to and participate in charitable activities or fund-raising drives.

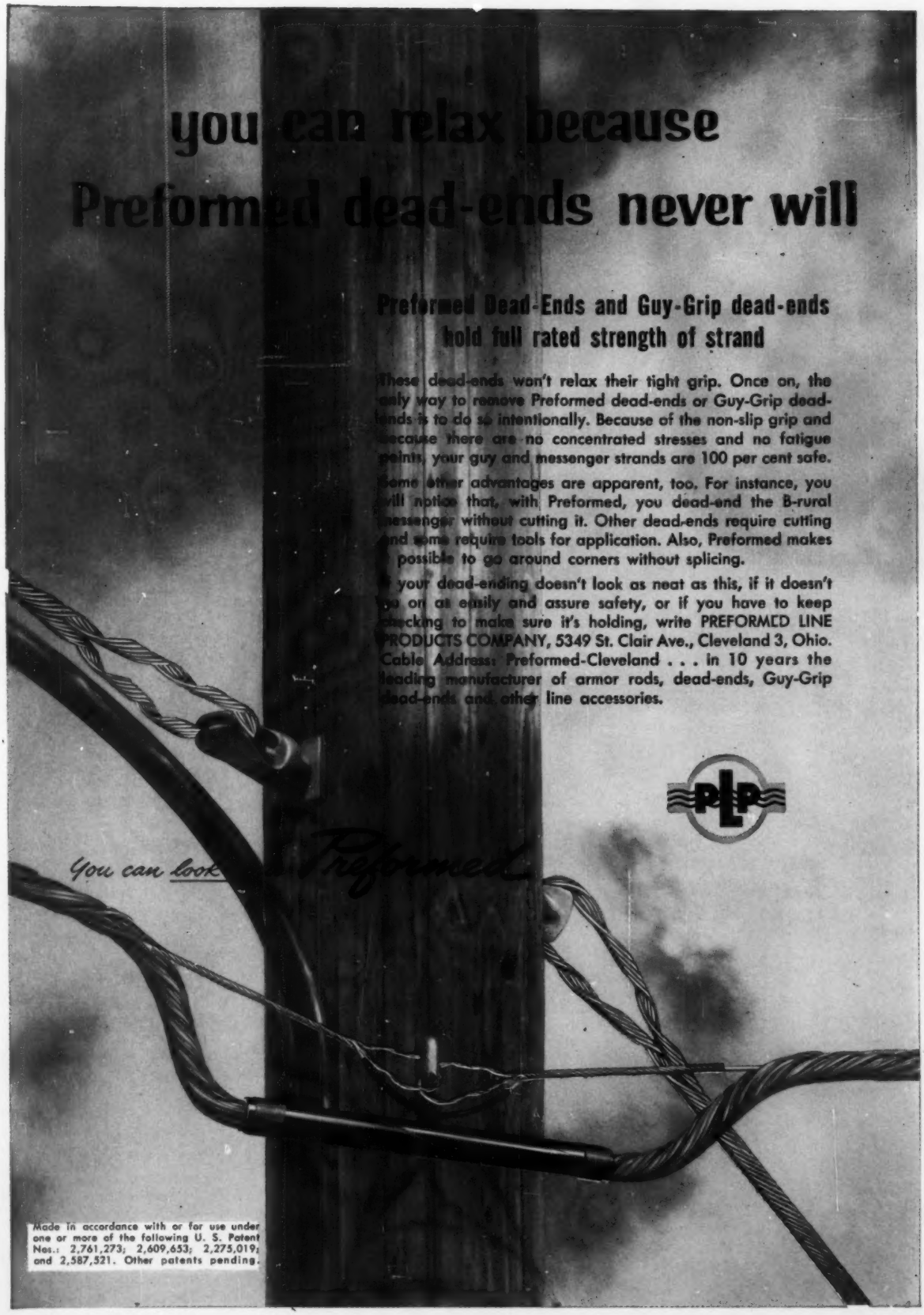
Take an active part in civic and cultural affairs.

Another phase of public relations, Mr. Kehoe stated, is the publicity follow-through—mainly involving the local newspapers, radio and television stations. He advised telephone men not to assume the newspaper editor, columnist or reporter knows all of what's going on; also that telephone developments often constitute news although the telephone executive may not think so.

Therefore, he said, a regular plan of sending news releases should be instituted, and now and then augmented by advertising. Another suggestion Mr. Kehoe advanced was the development

(Please turn to page 44)

H. B. Flower (left) of Wisconsin Rapids, receives the gavel as newly-elected president of the Wisconsin State Telephone Association from Wyman W. Wiswell of Elkhorn, immediate past president, as Ray J. Riordan, association secretary-treasurer, looks on.


you can relax because
Preformed dead-ends never will
Preformed Dead-Ends and Guy-Grip dead-ends hold full rated strength of strand
These dead-ends won't relax their tight grip. Once on, the only way to remove Preformed dead-ends or Guy-Grip dead-ends is to do so intentionally. Because of the non-slip grip and because there are no concentrated stresses and no fatigue points, your guy and messenger strands are 100 per cent safe.
Some other advantages are apparent, too. For instance, you will notice that, with Preformed, you dead-end the B-rural messenger without cutting it. Other dead-ends require cutting and some require tools for application. Also, Preformed makes it possible to go around corners without splicing.
If your dead-ending doesn't look as neat as this, if it doesn't go on as easily and assure safety, or if you have to keep checking to make sure it's holding, write PREFORMED LINE PRODUCTS COMPANY, 5349 St. Clair Ave., Cleveland 3, Ohio. Cable Address: Preformed-Cleveland . . . in 10 years the leading manufacturer of armor rods, dead-ends, Guy-Grip dead-ends and other line accessories.
PLP
You can look to Preformed
Made in accordance with or for use under one or more of the following U. S. Patent Nos.: 2,761,273; 2,609,653; 2,275,019; and 2,587,521. Other patents pending.

YOU SEE THE DIAL...

New Type 82 Telephone...

With Automatic's new Type 82 Telephone, your subscriber can *dial in the dark.* The letters, numbers and finger holes on the dial are lighted. This telephone is an added convenience for which your subscribers will gladly pay extra.

HOW IT WORKS!

The Type 82 Telephone has two cords: the standard telephone connection cord and a cord for the dial light that plugs directly into a 110-Volt A.C. outlet. Once this cord is plugged in, the dial is lighted 24 hours a day. The electricity required costs the subscriber about five cents a year.

MAKES TELEPHONING EASIER!

With the Type 82 Telephone, your subscriber can make calls in darkness or twilight without groping for the right finger holes. And when the phone rings at night the light leads you right to it. In a test market, users told us that the Type 82 is a handy directional guide in a dark room.

MINIMUM MAINTENANCE!

The lighted dial on the Type 82 is electro-luminescent (not incandescent) so

The Dial-Lighted Telephone!

there's no filament to burn out. Once installed, you can be sure that it will give your subscriber dependable service with little or no maintenance.

SAFE AS A REGULAR PHONE!

Because of limiting resistors, the Type 82 dial never draws more than five milliamperes of current—even if it should develop a short circuit! And it's listed by Underwriters' Laboratories, Inc.

HAS ALL THE FAMOUS TYPE 80 FEATURES!

The Type 82 Telephone has all the features of the famous Type 80—plus a lighted dial! And it's available in any of our ten attractive colors: Gardenia White, Camellia Pink, Forget-Me-Not Blue, Sunlight Yellow, Classic Ivory, Sand Beige, Garnet Red, Dawn Grey, Jade Green and Turquoise. Ask your Automatic representative about the Type 82 Dial-Lighted Telephone. He'll be glad to give you all the details. *Address: Automatic Electric Sales Corporation, Northlake, Illinois. Or call Fillmore 5-7111.*

AUTOMATIC ELECTRIC

Subsidiary of **GENERAL TELEPHONE**

New Type 82 Telephone...

With Automatic's new Type 82 Telephone, your subscriber can *dial in the dark.* The letters, numbers and finger holes on the dial are lighted. This telephone is an added convenience for which your subscribers will gladly pay extra.

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Looking over the discussion agenda prepared for the Commercial Workshop are (standing, left to right): Dean Parrish of Platteville (holding paper); Wade Cash of Monroe, workshop moderator; R. O. Russell of General Telephone Co. of Wisconsin, and K. J. Jackson of the Wisconsin Public Service Commission. Seated are: James Cole (left) of the Wisconsin Telephone Co., and D. W. Busse of General of Wisconsin.

grow, though perhaps at a slightly slower pace.

"In such a psychology, automobile dealers could immediately get new cars on the road by offering to rent them as an alternative to selling them. This would meet the human resistance of hesitancy to make long-term debt commitments at a time when the individual has doubts about his own certainty of continuity in his income flow.

"The dealers already, with their bankers, own the unwanted accumulated inventory of cars. They are already committed, whereas their reluctant customers are uncommitted free agents. My rental suggestion would break the deadlock. Customers could rent new cars with no more risk than ordering additional telephone service.

"There is, of course, a growing business of renting cars by the hour, day or week, but, in order to meet the recession psychology, this principle should be extended by renting to individuals with the hope that the deal will continue through the life of the car. Users of business fleets of cars are already operating on this principle."

Mr. Rukeyser advised telephone men to avoid getting into the national guessing contest on whether the recession is bottoming out, and instead to continue to capitalize on the aforementioned advantage, and to keep selling.

The Dial-Lighted Telephone!

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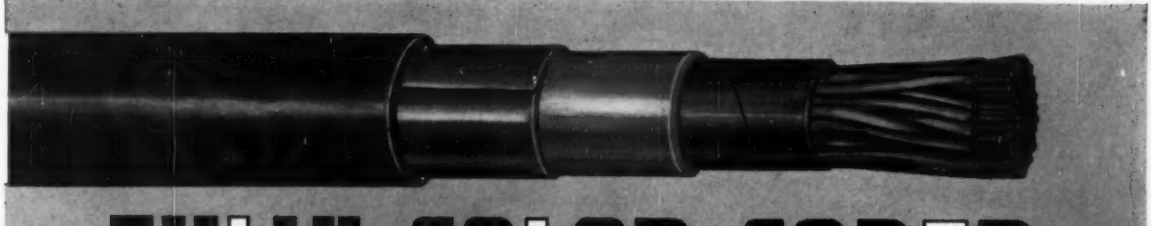
POLYETHYLENE CABLE

FOR AERIAL & DUCT TO REA SPEC PE-22, BURIED SERVICE TO REA SPEC PE-24



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of a standing direct mail list including not only those mentioned but also the chamber of commerce, bankers, retail merchants and even disk jockeys.

Merryle S. Rukeyser, in the talk referred to above and titled, "What's Ahead for the U.S.A.," stated we are in a race for survival—not only physical but intellectual as well. One problem encountered in the race is the current U. S. recession. As one possible palliative for the recession, Mr. Rukeyser said that industry, especially heavy industry, could take a lesson from the telephone industry. He explained:

"There is no boom-and-bust pattern in the telephone industry. Why not? Well, looking at the capital goods industries (for example, automobiles) for a moment for comparison, we find that they produce goods whose purchase is postponable. Today, in the recession, the buyer is willing to make do with last year's model.

"This is not the whole of the story, but, in contrast, the telephone industry makes it easy for the customer to buy service. Telephone companies take the risk from the customer for investment in plant and equipment. This is even more sensible when it is realized that the company can finance the equipment more economically than the customer."

In one of Mr. Rukeyser's recent nationally-syndicated columns, he spelled out his automobile rental plan as follows:

"The key to remedial and effective selling lies in the fact that the consumer has not been discriminating against durable goods because it was durable.

"His technique has been to postpone decisions and commitments until there is clearer evidence that the slump is over and that his own economic prospects are improving.

"But the customer is not postponing all commitments for durable goods. The demand for telephones, electric light, gas and other utilities continues to grow, though perhaps at a slightly slower pace.

"In such a psychology, automobile dealers could immediately get new cars on the road by offering to rent them as an alternative to selling them. This would meet the human resistance of hesitancy to make long-term debt commitments at a time when the individual has doubts about his own certainty of continuity in his income flow.

"The dealers already, with their bankers, own the unwanted accumulated inventory of cars. They are already committed, whereas their reluctant customers are uncommitted free agents. My rental suggestion would break the deadlock. Customers could rent new cars with no more risk than ordering additional telephone service.

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Mr. Rukeyser advised telephone men to avoid getting into the national guessing contest on whether the recession is bottoming out, and instead to continue to capitalize on the aforementioned advantage, and to keep selling.

As part of the selling approach, he urged emphasis on what telephone service will do for the customer and what it will save him. He cited the housewife who needs a telephone in the kitchen or upstairs to save steps and time, as well as physical wear and tear.

Mr. Rukeyser reviewed some of the optimistic factors in the economy that developed during the recession; for example, continuing improvement in the productivity of workers; increasing

Delegates from four member companies of the Wisconsin association view one of the supplier displays. Seated are Harold Wipperman (left) of Mosel and Jacob Macoisek of Cable. Standing (left to right) are: George Jetzer of Mosel; Charles O. Iverson of Amherst; John Dybedal of Cable, and William Lawton of Viroqua.

For easier splicing, checking and terminating . . . . .

Specify REX

POLYETHYLENE CABLE

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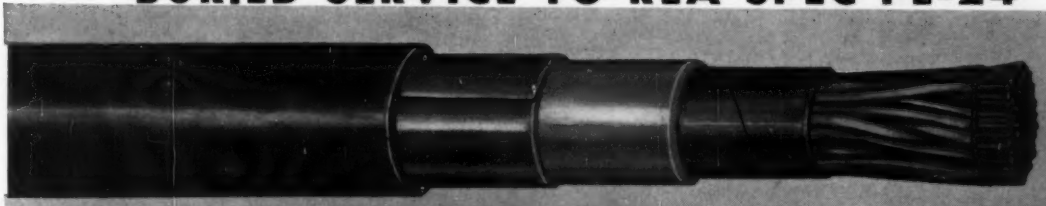

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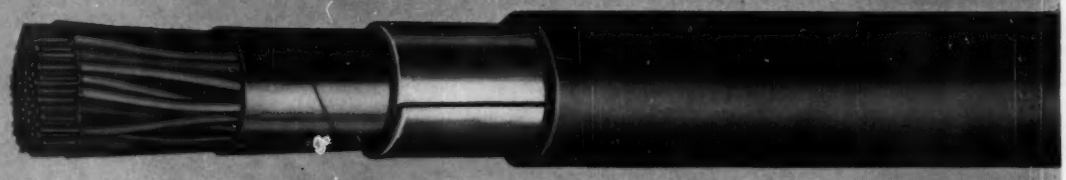

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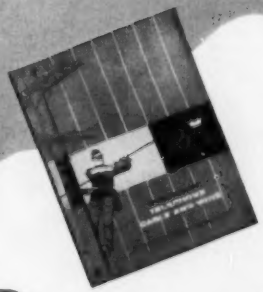

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availability of loanable funds and a lowering of the price for them. He also pointed out that since low volume causes unit cost to go up, the most useful activity for businessmen today is to go out and sell in order to get volume back up. And of course, he said, this must not be just an activity of the present; there must be an uninterrupted effort to sell, promote and develop new demand.

Mr. Rukeyser lamented the rigidity of costs and labor rates in today's economy, which, he said, are unnecessarily slowing up recovery.

All types of gimmicks are being proposed in Washington to artificially stimulate the economy, he said, but these don't take adequate account of necessary readjustments in industry and business. He urged redefinition of labor-management laws, and also passage of the Sadlak-Herlong bill for five to nine-year tax revision. Mr. Rukeyser also advised some forbearance in disposing of personal income in order to allow for investments in bonds, stocks and investment funds, and to leave savings for bank accounts, insurance policies and the like.

Pension committee progress was included in the annual report presented by Ray J. Riordan, association secretary-treasurer. He stated that the committee hopes that by developing a pension plan adapted to participation by all association members, the participants will gain the benefits normally available only to large companies—that is, a low unit cost.

Mr. Riordan said the association plans another fall management conference at Eau Claire, the last one having been attended by about 135 people representing, in all, 60 companies. A spring plant conference also is planned.

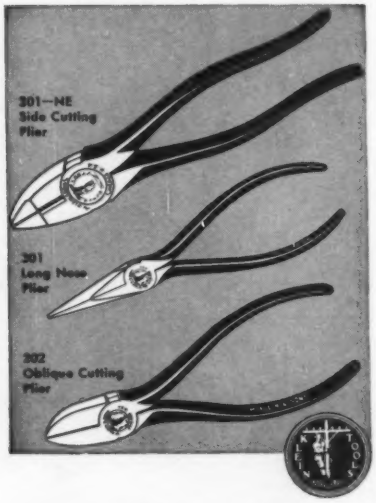
Noting that an increasing number of miscellaneous services are being offered and merchandised by Independents, Mr. Riordan observed this will be the source for additional revenue to which operating companies will turn whenever the market becomes saturated with primary service.

He also referred to the federal excise tax as a tax without honor as he detailed some of the points against it. He stressed that telephone people must convince the subscribers—especially the owners of larger businesses—that they, being the real taxpayers in this case, must press for its repeal.

"Some Industry Guideposts" were set up and described by J. T. Naylor, vice

Attending the convention were three generations of the Bowden family. In May, A. H. Bowden (right) of Almond celebrated the 50th anniversary of his start in the telephone business. He has been president of the Wisconsin association and was a board member for 30 years, a record for length of directorship in Wisconsin. He and his son, Dwight Bowden (left), operate three companies—the Almond, Coloma and Union Telephone Cos.—the combined number of subscribers exceeding 2,000. Between the elders is third-generation Karen, two years old.

KLEINS



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It is so ductile—and so tightly locked to each wire—that checking, cracking, and peeling are all but eliminated. Moisture and fume-laden atmosphere cannot get through to the steel. That's why Bethlehem strand, the *fully protected* strand, is always a sound investment where extra-long service is required.

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BETHLEHEM STEEL

BETHLEHEM STEEL

president, United Utilities, Inc., Kansas City, Mo. One set of guideposts is that used by investors considering purchase of telephone company stock. Mr. Naylor listed six of their yardsticks:

"First, they want to know *who* we are and what kind of management directs us.

"Second, they are interested in knowing where we are located and what kind of economic potential and stability our territories possess.

"Third, they are interested in knowing the size and scope of our business.

"Fourth, they are interested in how much we are earning and how reliably those earnings can be forecast.

"Fifth, for the purpose of this discussion, they wish to have assurance of our financial policies and to know the practices applied in satisfying our obligations to the investors.

"Sixth, they want us on record, that is, all of the aforementioned answers down on paper.

"I believe it worth our while to take a sharp look at each of these phases of interest. I feel that it helps any company, large or small, to make frequent or perhaps constant self-appraisal in each of these spheres. If favorable answers emerge from such an inventory, I feel that it can be said that any company is on firm credit foundations. If, on the other hand, a questionable status is found in any phase of these fields of interest, correction is called for and there are infirmities to be cured."

Mr. Naylor stated that there are over 200 telephone companies in Wisconsin and 171 of these, or over 85 per cent of the Independents, have less than 1,000 telephones. He said this suggests: "Financial enlargement and expansion for many of these companies may have to come directly out of the present owners' pockets. In these cases, it is doubtful that there is enough size and diversity within the ownership area to enjoy desirable credit from outside sources for loans or to generate the corresponding income to underwrite additional capital on an adequate basis."

Even if government money is used, he said, the income factor is probably a limiting circumstance so long as reasonable rate levels are maintained. Since there are still over 335,000 telephones operating on a manual basis in this state, he continued, many Wisconsin telephone people may be asking themselves, "How can we possibly afford to do the things which should be done?"

Mr. Naylor answered, "Where this problem is faced you may, in many instances, be considering methods of consolidating properties and joining hands in building larger and more economic corporate or partnership units. This is good. The principal problem involved may be deciding *who* you want to work with and *whose* hands you want to clasp in permanent common endeavor.

"I feel that it would be unjust to recommend anything but ultra-conservatism and a cautious financial program unless you are a company which has substantially more than 1,000 stations; I would say even 5,000 stations, and preferably as an optimum, 10,000 stations per company.

"With such a development, and assuming the exchanges are reasonably accessible and preferably integrated and contiguous, the basis for healthy permanent growth and replacement can be established under orthodox methods of borrowing money and bringing in new investors."

Referring to the evolution in the commercial phase of the business Mr. Naylor commented:

"Most of us have gone through at least parts of the candlestick, handset, and color evolutions in the business. The era of telephone portability, multiple extensions, uni-location signalling and loudspeaking telephones is upon us. These added to recording techniques, data transmission, and the increasing demand for private line voice, message and digital facilities recommend a sharp and critical look at the over-all rate and commercial programs.

"There is a vast latitude for the judgment factor in establishing rates under an optimum value of service and cost of service balance. It is possible that we have already outgrown many old concepts wherein the idea of "special" and "supplemental" were the bases for either superficiality or downright carelessness in the fixing of rates."

Mr. Naylor said he feels that the industry's commercial thinking should be keyed to the cold realities of the day. He said telephone operating men still engage in some outdated conversation about disliking certain types of service and therefore discouraging its enlargement.

Mr. Naylor continued: "I do not believe we have any effective or permanent influence on what the public wants and will, sooner or later, have. Our commercial problem can seldom be one of discouraging a legitimate need but should rather be the development of a compensatory and fair marketing pattern to fit everything marketable."

To achieve this, he recommended the sharing of ideas between companies and the discreet development of more or less uniform commercial treatment which will fully "foot the bill."

One of the dilemmas confronting our private enterprise culture today, Mr. Naylor said, is that of finding sound bases for meeting those legitimate de-

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... CUSTOM DESIGNED FOR TELEPHONE MAINTENANCE WORK!

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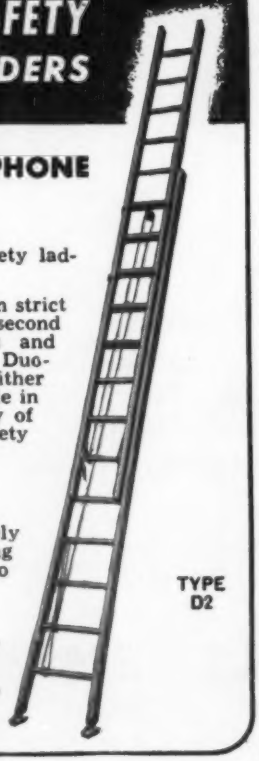

TYPE D2

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mands which are inherently uneconomic. He continued:

"The idea of subsidy, or taking from one to supply the needs of another, has been a prerogative of government and the socialistic approach. We seem to have a serious problem in this respect in this "area coverage" ideal which we are all reaching out to achieve.

"The problem is complicated not only by new demand in remote areas where serving costs are prohibitive, but in having to rebuild many service station and cooperative facilities which grew out of the earlier and less exacting demands of the service.

"It is doubtful that we can escape entirely from subsidy in many rural areas. On the other hand, informed regulation and a proper appreciation in small towns of the value of rural communications to the commercial welfare of these small communities is developing a fairly sound apportionment to base rate area rate schedules to enable reaching out to the boundaries of the exchange and the marketing area.

"There has been a steady liberalization of line extension rules until it appears that we may be approaching the limit without imposing inequities and making subsidies too flagrant in the rate structures.

"On the other hand, timing and rural service planning on a composite exchange basis oftentimes presents a practical solution or goes far toward enhancing rural service under tenable commercial principles.

"In meeting this rural problem, I should like to recommend for your consideration, where applicable, the undertaking of wholesale rural improvement programs, engaging the cooperation of local chambers of commerce and civic clubs in generating the farmers' interest in such programs. This may be made to coincide with dial conversion projects or may be justified in and of itself.

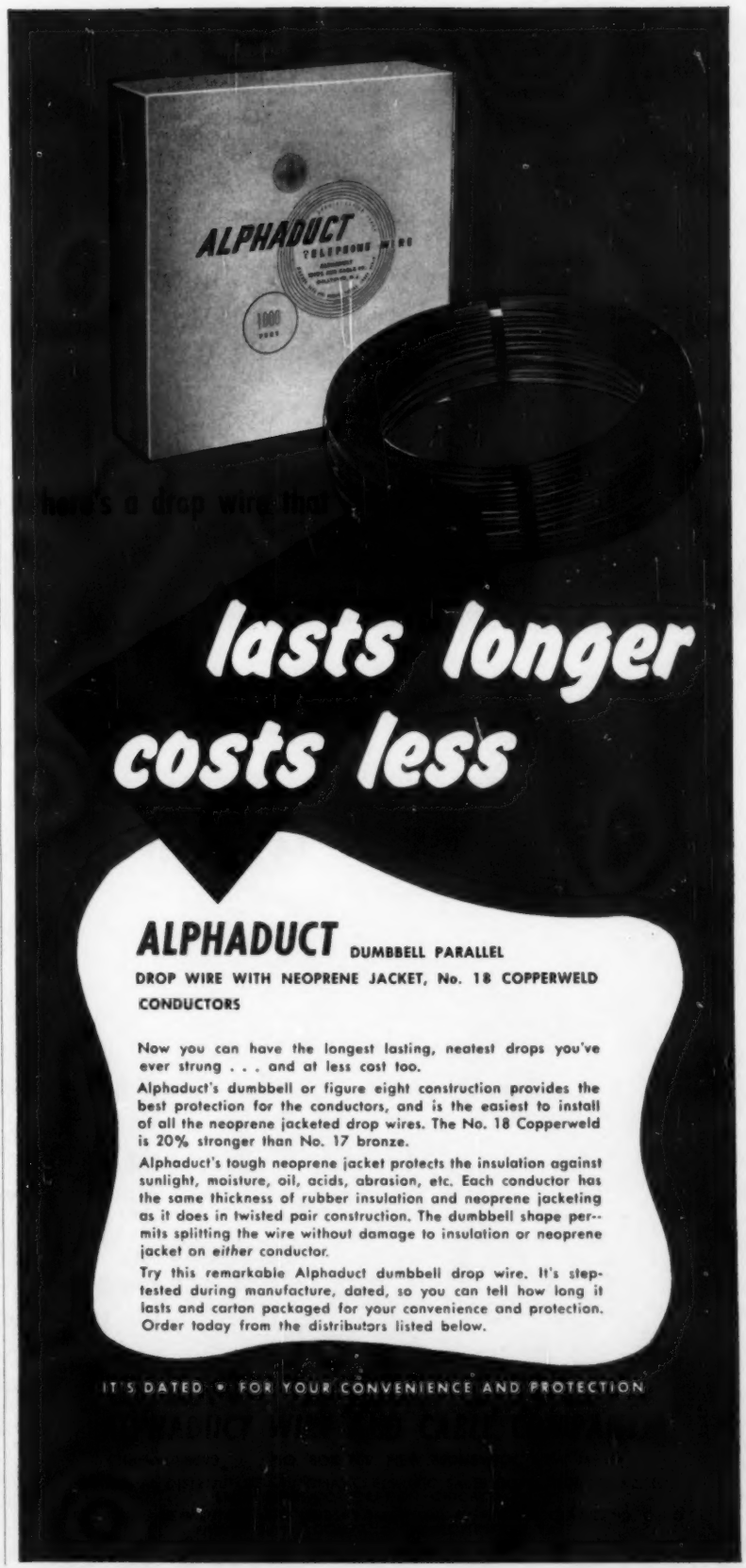
"Such methods avail of the inherent efficiencies of concentrated effort on a major scale. They also may permit the application of line extension principles to a sufficient number of applicants under varying conditions to reduce the initial unit cost for everyone to an acceptable figure or possibly to eliminate subscriber investment participation entirely.

"In setting up a wholesale rural 'clean-up' program, I believe it will be found that many of the disproportionate expenses to the applicant of ordinary line extension rules, when applied on a line-by-line basis, may be averaged out to a minimum agreeable figure if applied to the complete problem in the rural districts of an entire exchange.

"There are no absolute answers, but in developing rural commercial concepts, I believe we need to draw fully upon our practical imagination to get the job done. . . ."

Miss May Roach of Eau Claire, expanded in an inspirational and philosophical vein on the subject of "Making a Living While Building a Life." She observed that a lot of enjoyment

(Please turn to page 52)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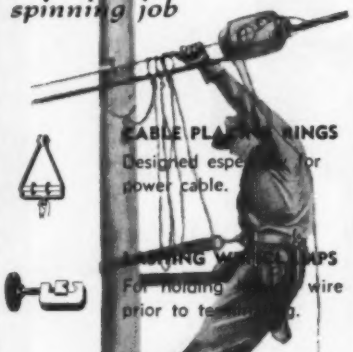

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Pirelli of Great Britain

of life depends on the dimensions of one's outlook—small, medium, or large.

She stressed the importance of peace of mind accruing from being employed in a worthwhile job. In this regard she pointed up the responsibility of all people for others less fortunate and then said that a job should have the larger dimensions of concern for one's fellow man and not just a focusing on "making a dollar."

Miss Roach concluded: "If you telephone people can de-emphasize the dollar-getting and keep uppermost the spirit of service to your fellow man, this will make life a lot more livable, inspiring and satisfying."

A commercial-accounting workshop included as panelists: Wade Cash of Monroe; Dean Parrish of Platteville; D. W. Busse and R. O. Russell of General Telephone Co. of Wisconsin, and James Cole of the Wisconsin Telephone Co.

The plant workshop had as discussion leader, D. H. Hansen of LaCrosse; panelists were: A. W. Raffil of Madison; M. M. Wandrey of Des Plaines, Ill., and L. W. Butler of Milwaukee.

At the plant conference, in addition to technical questions, merchandising and selling, as they apply to the installers and repairmen, came in for considerable discussion. The point was made that in the time these employes are in the subscriber's home, instead of talking about the weather, they may more profitably discuss extensions, color telephones or additional service. Other aspects of merchandising touched upon were:

Prospect cards, on which installers and repairmen may report status or extent of a subscriber's service.

Clear plastic carrying cases, which installer-repairmen may use to carry color telephones.

Ways to motivate plant men who feel they weren't employed to sell. One method advanced involved intra-company team competition.

A merchandising booklet as a sales aid to plant men.

Other plant topics included fire alarm systems; line concentrators to assist the serving of housing developments some distance from the main service area; and television cable.

The association elected the following directors: D. H. Hansen of La Crosse, succeeding E. B. Samp, also of La Crosse; Karl Mohr of Tomah, who died on May 25 following the convention and who succeeded H. G. Allen, also of Tomah, and G. H. Moede of Milwaukee, who succeeded G. A. Rutenbeck, also of Milwaukee. F. H. Schafer of Clintonville, and L. J. Robertson of Platteville, were re-elected.

Other directors are: E. L. Beyl of Osceola; H. B. Flower of Wisconsin Rapids; J. H. Hesselman of Mondovi; R. H. Keating of Wausaukee; Karl Mess Jr. of Phillips; G. F. Moser of Sharon; R. S. Odegard of Menomonee Falls; Paul R. Parsons of Rhinelander; H. P. Siebken of Madison; F. N. Willkomm of Lancaster, and Wyman W. Wiswell of Elkorn.

The directors elected the following officers: President, Mr. Flower; vice president, Mr. Siebken, and secretary-treasurer, Ray J. Riordan.

Communications Field Has Lowest Injury Rate in 1957

The communications industry had the lowest average injury frequency rate (based on the number of disabling injuries per million man-hours) in 40 basic industry classifications covered, according to the National Safety Council. Communications had a frequency rate of 1.00 injury per million man-hours.

However, for the second consecutive year, the industry was first in the severity column with a rate of 70, based on the number of days lost per million man-hours. This represented an increase in 1957 of 21 per cent.

These figures were released by the safety council on its member companies in advance of the 1958 edition of "Accident Facts," the council's annual statistical yearbook.

Of the 40 industries covered, 21 either reduced their frequency rates or showed no change while 19 cut their severity rates or remained the same.

The average injury frequency rate for all participating companies was 6.27 in 1957, a 2 per cent reduction from the previous year. This marked the third time the all-industry rate was lower than 7.

The average injury severity rate for reporting industries was 750 in 1957, a 1 per cent increase.

Baghdad Pact Countries Get Aid For Microwave

The United States is giving Baghdad Pact countries 17 million dollars for the developing of a network of ultra high frequency radio microwave circuits throughout the Pact area, it was reported recently.

An American survey team is doing the groundwork for the project which will strengthen the telecommunication network between Teheran, Ankara, Baghdad, Karachi, and London.

Great Britain is helping to install this high frequency telephone and telegraphic equipment. It is expected that the installation will be ready early next year.

HOW THE WEBSTER ELECTRIC Teletalk can...

extend communication convenience for your customers —and build up EXTRA revenue for you

New 1200 series Teletalk intercommunication equipment has been especially designed for telephone company use to help you provide inter-office and inter-building communication for your commercial and industrial customers — *utilizing standard telephone circuits.* This will in no way affect telephone conversations in the same or adjoining cables.

Teletalk is available from Graybar — nationally. Through a wide variety of models and circuit possibilities, you can fit Teletalk exactly to the needs of each individual customer. Wherever there is a need for amplified communication, a discussion of Teletalk convenience can lead to an immediate increase in your lease revenue. Call your nearby Graybar office for full details or write for Bulletin MI2AI-1. 810

Above: This 12-station master unit of the new Teletalk 1200 Series can be connected to provide secretive or non-secretive communication with other stations. Models are available from six to 48 station capacity. Below: Two-way conversation is provided over zero-level telephone lines with this Teletalk RM-B (AC) remote speaker station. Contains its own power supply, amplifier, attenuating pad and line-matching transformer.

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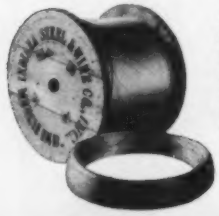
IN OVER 130 PRINCIPAL CITIES

Those who design, build and maintain aerial telephone cable lines will find the technical information in this manual both pertinent and useful.

The sag and tension data cover three sizes of "Utilities Grade" strand when used as messenger to support plastic-sheath or lead-sheath cable. These data will be helpful in determining the size of strand to be used for a particular weight of cable and span length, and in answering other questions relating to design problems.

This Manual will be mailed without obligation to all interested telephone men. Ask for Manual No. MS-58.



Crapo Galvanized Steel Strand (for both messenger and guys) is available in all standard sizes and grades and in Class A, B and C coatings.

INDIANA

STEEL & WIRE CO., INC.

Muncie, Indiana

Courts and Commissions

Deny Interim Raise in Wash. For West Coast Company

The Washington Public Service Commission on June 9 denied a request by the West Coast Telephone Co., Everett, for a temporary rate increase (TELEPHONY, Mar. 29, p. 42).

The company is seeking rate increases totaling approximately $1,125,570 a year in Washington. While this request is being processed, the company had sought an interim rate raise.

West Coast officials contended that the company's rate of return for the year ending Mar. 31 was 5.61 per cent and a projection indicates that it will be 5.41 per cent for 1958. This, the company said, is substantially less than the 6.6 to 6.8 per cent the commission previously determined to be a fair rate of return.

In denying the interim increase, the commission noted that it had not yet had an opportunity to cross-examine company witnesses nor to present evidence of staff members of the commission.

Preformed Files Patent Suit Against McGraw-Edison

Preformed Line Products Co., Cleveland, O., on May 1 filed a suit in the Federal Court in Los Angeles, Cal. against the city of Los Angeles and the Mc-Graw-Edison Co.

The complaint lodged against the defendants in this suit is for infringement of the Preformed Company's patent No. 2,761,273 (dead-ends.) The city of Los Angeles purchased dead-ends manufactured by the Fanner Mfg. Co., a division of Textron, from Line Material Industries, a division of McGraw-Edison Co.

The suit requests that both defendants be enjoined from further direct or contributory infringement of this patent and asks damages due to the infringement.

U. S. Court Issues Decision On Tenn. Relocation Costs

Telephone companies must pay for moving their equipment during highway construction if the lines are on old rights-of-way, the U. S. Sixth Circuit Court of Appeals has ruled, according to a June 5 report.

The decision involves Southern Bell Telephone & Telegraph Co.'s lines between Banner Bridge and Gatlinburg, Tenn.

Southern Bell is entitled to recover $28,476 for temporary and permanent relocation of 38 poles on private land, taken in condemnation, but nothing on relocation of five poles on old rights-of-way, it was stated.

This decision partly reverses that of Federal Judge Robert L. Taylor who in 1954 ruled that Southern Bell could recover for the relocation of all the poles in the way of the Foothills road between the two Tennessee cities.

All parties in the suit, the government, the state of Tennessee, Southern Bell, and Sevier County appealed the current ruling.

Sevier County and the state must pay the company $28,476 but the federal government owes nothing, according to the present decision. The deed to rights of way from the state says relocation expenses will be paid by the state and county, the decision said.

Of the $28,476 total, Tennessee must pay $4,916 to compensate Southern Bell for temporary relocation when the suit was first filed in 1953. And the state must also pay $15,707—two-thirds—of the $23,560 permanent relocation costs with Sevier County paying the other third, $7,853.

Southern Bell first sued in Sevier Chancery Court in January 1953, asking that a construction company working under state contract be enjoined from moving telephone lines in the right of way.

The case then went to Federal Court in Knoxville, Tenn., and the injunction was dissolved. Southern Bell then agreed to temporarily relocate the lines allowing construction to continue.

Deny Rate Increase to NW Bell in South Dakota

The South Dakota Public Utilities Commission on June 2 rejected an application by Northwestern Bell Telephone Co. for a rate increase which had been intended to bring in $500,000 in additional annual revenue (TELEPHONY, Apr. 26, p. 130).

Finding that the average rate of return on the company's operations in South Dakota for the years 1954 through 1957 was 6.17 per cent on a

(Please turn to page 58)

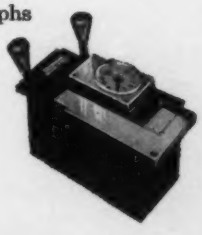
now YOU CAN USE ANY SIZE TOLL TICKET WITH THE NEW CALCULAGRAPH SET-BACK HANDLE

Here's still another new feature that makes Calculagraph the best and easiest method to time toll calls—it's the new set-back handle that enables you to use ANY SIZE toll ticket.

This new Calculagraph development brings to *three*, the number of major advancements in the past year alone—the 60-minute dial, color handles and now the set-back handle.

These are 3 more good reasons why Calculagraphs should be in your switchboard to make toll call timing easier for your busy operators.

Write today for complete information that tells how Calculagraphs can be used in your switchboard.



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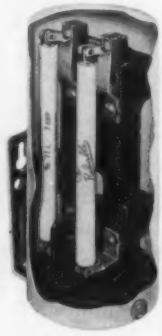
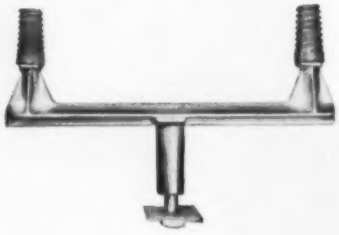
For Use with Plastic Cable—The S-20V protected or unprotected terminal has 2 cable entrances arranged to take any size of compression coupling from 6 to 51 pair. Pipe Plug inserted when one cable entrance is required. A product of COOK ELECTRIC COMPANY.



Reliable Series 2000 Station Protecter Fuse Mount has phenolic and flexible Neoprene base with integral wire entrance sealing slots. Fuse mount and terminal post design permits wiring without removal of fuses. Reversible for left or right hand wiring. RELIABLE ELECTRIC COMPANY.



Speed up Installation with one-piece, all aluminum, transposition brackets. Light weight, easy to handle and install. They come completely assembled in cartons of 20 brackets each and can be moved to job in original shipping cartons. Delivery 10 days from receipt of purchase order. PERMANENT MOLD FOUNDRY, INC.

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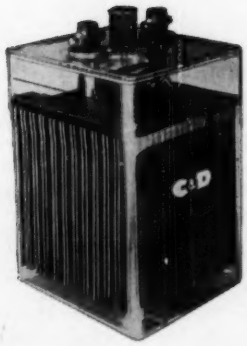
Little Giant Slack Puller is a rugged tool. Made of heavy steel and bronze. All steel parts are painted or cadmium-plated. Comes in two styles, slip handle and ratchet handle (shown). Safe, easy to use! Made by CABLE SPINNING EQUIPMENT COMPANY.



Extra-Long Life!—The suspended and supported plate construction is an exclusive feature of C&D BATTERIES. Choose C&D PlastiCal (lead-calcium grid) for life expectancy of 25 years . . . for 14 years expectancy, specify PlastiCell (high tensile lead alloy grids). Made by C&D BATTERIES, INC.

Longer spans, lower costs. Crapo HTL-195, the new extra high tensile, lower resistance telephone line wire makes possible up to 40% reduction in pole structures with marked savings in construction costs. Developed and manufactured by INDIANA STEEL & WIRE COMPANY, INC.

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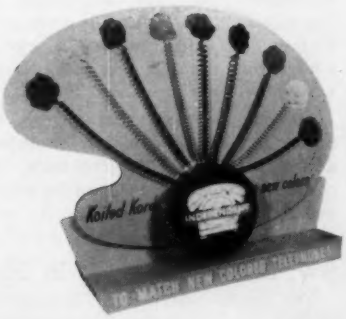
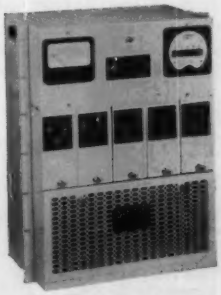


Koiled Kords—Customer satisfaction and long service life are assured with Koiled Kords retractile telephone cords. Black and colored cords in standard and extra lengths are available for replacement purposes and for use on new equipment. Made by KOILED KORDS, INCORPORATED.



Transistor Sub-Cycle—Operates directly from 50-volt exchange battery for regular or stand-by service. No expendable or moving parts—Stabilized ringing frequencies—Regulated ringing voltages—Sine wave output—Capacity 0.200 amp per ringing frequency—Available for Harmonic, Synchromonic, and Decimonic Ringing. LORAIN PRODUCTS CORPORATION.

total plant investment of $37,628,585, the commission held this return to be reasonable.

The company's total investment in the state devoted strictly to operations within South Dakota was $28,130,179 in 1957, according to the commission. On this investment, the return in 1957 was 5.8 per cent, which also is reasonable, the commission said.

"The applicant," the commission declared, "failed to prove the necessity for any further upward adjustment in its local exchange rates at this time."

U. S. Court Voids Miss. Franchise Tax Law

A 1956 Mississippi law under which the city of Meridian sought to collect 2 per cent of the monthly service charges of Southern Bell Telephone & Telegraph Co. to pay for the use of public properties was held invalid on June 9 by the U. S. Fifth Circuit Court of Appeals (TELEPHONY, Feb. 23, 1957, p. 54).

The appellate court affirmed a decision on the test case by the U. S. District Court for the southern district of Mississippi.

Emphasizing that it was not dealing with questions of the taxing and police powers of the state or city, the appellate court held that Meridian's effort to charge for the use of streets, alleys, and other public places in the placement of poles, lines, and other equipment, was contrary to a prior Mississippi law of 1886.

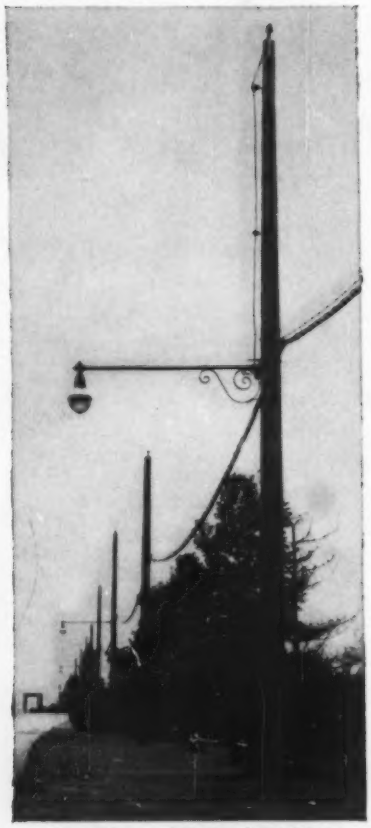
In 1886, the state, which then controlled all highways and streets, metropolitan and otherwise, passed a law offering telephone and telegraph companies the use of highways and streets without compensation to expand services.

The appellate court agreed with the district court and with Southern Bell that a charge for such a right-of-way as under the 1956 Mississippi act "constitutes an unlawful attempt to violate the obligations of a contract which was created and has been in existence for more than 70 years."

Meridian officials had argued that the 1886 act was merely permissive and was revocable by the state. The court held this argument to be without merit.

SW Bell Adds Area in Kan.

The Southwestern Bell Telephone Co. on June 11 was granted permission by the Kansas Corporation Commission to take over the territory previously served by the Silverdale Telephone Exchange. About 30 stations were involved.



LONG LIFE FOR POLES MEANS LOW ANNUAL COST

This pressure-creosoted pole is one of many the New York Telephone Company installed on Staten Island nearly 60 years ago. Service records, like this, prove the wisdom of specifying pressure-treatment. Pressure-treated poles stay sound and strong; are protected against decay and termites. Their strength and durability are a guarantee of year after year, low-cost operation.

And to be sure of top quality pressure-treated poles—include inspection by the "assay" method on your next order. Koppers is filling orders based on assay inspection at no extra cost.

. . . for Dollar Saving Facts

Write for the 38-page guidebook on pressure-treated poles, crossarms, timbers. It is jam-packed with valuable data.

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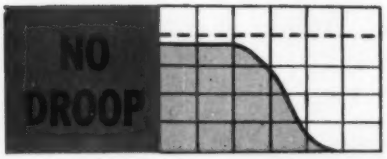

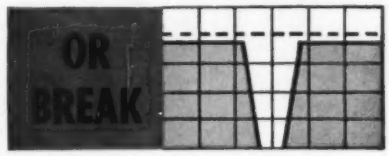

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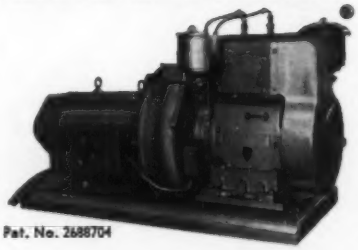

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OK Raise for Tex., Okla. Exchanges of General of SW

The following rate increase became effective recently for the Megargel, Tex. exchange of the General Telephone Co. of the Southwest, San Angelo, Tex.:

	Old	*New*
One-party business	$4.75	$9.00
Two-party business	4.00	7.50
One-party residence	2.75	5.00
Two-party residence	2.50	4.00
Four-party residence	—	3.25

The Megargel exchange serves 144 stations and has been converted to automatic operation.

•

The Oklahoma Corporation Commission on May 20 granted a rate increase as follows to General Telephone Co. of the Southwest for its Fairfax exchange:

	Old	*New*
One-party business	$5.80	$7.60
Two-party business	—	6.60
One-party residence	3.30	4.35
Two-party residence	2.80	3.85
Four-party residence	—	3.35

The Fairfax exchange serves 800 stations and has been converted to automatic operation.

West Coast in Oregon Denied Rate Relief

Oregon Public Utility Commissioner, Howard Morgan, on June 6 denied two motions seeking "immediate relief" for West Coast Telephone Co.'s petitioned rate increase.

The decision was made after a two-day hearing in which Edward Graham, the company's attorney, moved that proposed new rate increases which would have added some $852,000 in annual revenue be approved and made effective immediately (TELEPHONY, May 3, p. 30).

Alabama Company Buys Two, Receives REA Financing

Ardmore Telephone Co., Inc., will purchase the Elkmont and New Market Telephone Cos. under authority granted recently by the Alabama Public Service Commission.

Authorization for the purchases, along with permission to make certain changes in the business structure of the Ardmore firm, included a grant of permission for the company to borrow $275,000 from the Rural Electrification Administration.

The commission also approved the issuance and sale of $1,850 in preferred stock.

According to the company's petition, funds from the loan and sale of stock

Transite Telephone Ducts come in a range of sizes for direct-burial and exposed-location use, also for concrete encasement

... save on installation and maintenance with

TRANSITE Telephone DUCTS

As TELEPHONE SYSTEMS grow in size and complexity, so does the need for dependable and economical protection of vital telephone cables. And J-M Transite Telephone Duct is getting ever-increasing preference as the Number One underground cable protector.

For Economy "down the line," Transite Ducts install faster—provide a better return on daily production. They permit smaller crews to attain faster laying rates. After the Ducts are in, savings on rodding and other maintenance further reduce job costs.

For Speed "down the line," Transite Ducts come in long, easy-to-handle 10-foot lengths with "glass-smooth" interiors for long cable pulls. Ducts can be joined quickly and securely with the J-M Plastic Coupling now used widely by the industry. And when called for, a variety of Transite fittings are available to meet usual installation requirements.

If you need ducts for direct burial or for exposed locations, specify

J-M Transite C Telephone Duct.

For concrete-encased ducts, specify

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Because Transite Ducts are made with durable, non-decaying minerals of the earth—asbestos and cement—they're "at home" in the ground . . . can't rust, rot or corrode. They protect lines against fire, weather and wear . . . are immune to electrolysis.

Why not have a Johns-Manville industry engineer explain all the cost-saving advantages of Transite Duct. Or if you'd like information beforehand, write for TD-78A. Johns-Manville, Telephone Dept., Pipe Division, Box 14, New York 16, N.Y. In Canada, Port Credit, Ontario.

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INSIDE-OUTSIDE
WIRES
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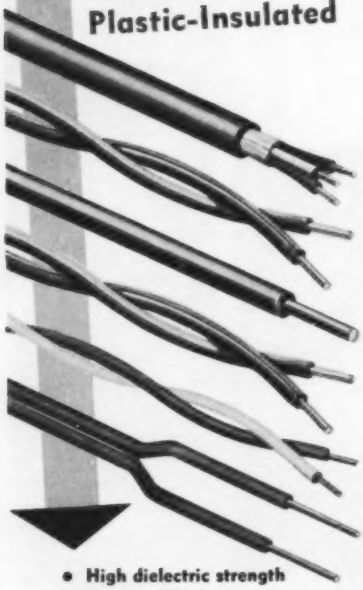

- **High dielectric strength**
- **Flameproof**
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- **Color-coded soft copper conductors**

Twin, triple, quad construction, with and without outer plastic jacket to extend circuits from outside terminating devices to station sets inside buildings.

Twin construction, with one tracer, twisted inside station wire . . . used in all types of building ducts, or exposed. Also twin or triple flat web type construction for installation with stapling gun.

Twin, triple, quad jumper wire — distributing frame wire nom. wall of .015". Semi-rigid polyvinyl chloride.

Ground wire for ground connections from station protector to ground.

For details, write

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Hickory, North Carolina

3143

will be used in the purchase of the two companies and the expansion of service.

Pacific T&T Asks Rate Increase in Oregon

A proposal to raise telephone rates was filed on May 28 with the Oregon Public Utility Commissioner by Pacific Telephone & Telegraph Co.

The PT&T proposal also calls for an increase on certain intrastate toll rates.

In February the company reported its net income for 1957 totaled $95,712,962, compared to $90,511,788 in 1956. F. A. Dresslar, company vice president and general manager, declared that the proposed new increase would give the company an additional $4,860,000 annually, but that federal income taxes and other taxes would take more than half of that amount.

Illinois Independent Asks Rate Relief

Okaw Commercial Telephone Co., Okawville, on June 7 asked the Illinois Commerce Commission for permission to increase rates in five communities, effective upon conversion to an automatic system.

The company requests the following increases for the Hoyleton exchange:

	Present	*Asked*
One-party residence	$3.25	$5.00
Multi-party residence ...	2.50	2.75
One-party business	5.00	6.50

Three Ask Raise in Wis.

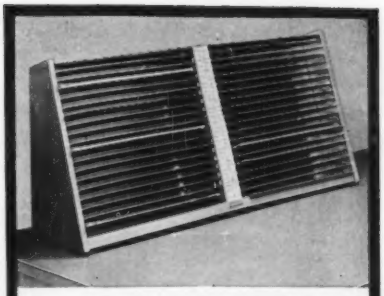
The Wisconsin Public Service Commission was scheduled on June 16 to hear the application of the Hillsdale Western Telephone Co., Hillsdale, for authority to increase rates. On June 17 the commission was to hear the rate increase applications of the Mt. Vernon Telephone Co. and the Mondovi Telephone Co.

Ark. Company Asks Sale OK

The White River Telephone Co., Inc., Elkins, has applied to the Arkansas Public Service Commission for permission to purchase the West Fork Telephone Co. Announcement of the purchase application was made on June 5 by Mrs. Ida Disney, secretary-treasurer of the White River company and George Hill, owner of the West Fork company.

Freedom, Man's Birthright

"Freedom is alone the unoriginated birthright of man; it belongs to him by force of his humanity, and is in dependence on the will and coaction of every other, in so far as this consists with every other person's freedom."—KANT.



Trouble Recorder Card Rack

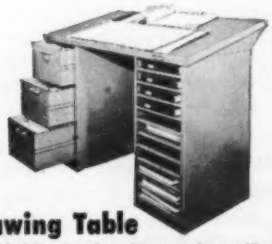
For fast orderly sorting of Trouble-Recorder cards, has 38 card slots in two banks with index strip between. Base is 38" by 8". Height 15". No. D30225-1.

Telephone Office Equipment

to lighten your work and improve efficiency

Work Bench

For repair, assembly, test and paper work. Top drawer divided into 24 compartments for parts and tools. Large file drawers are for circuit drawings. 54" x 25" top covered with masonite. Height 36". Drawers may be inserted from back to reverse position of kneehole. No. D29978-3.



Drawing Table

For circuit drawing in crossbar offices, provides central location for reference material. Masonite top is 30" x 60". Height 36" at front, 42" at rear. Three large file drawers at left for drawings. Eleven shelves at right are 2½" high, 14" wide, 18" deep for sketches, sequence charts, book type SD sheets, trunk serials, etc. No. D30326-1.

Color of all units: Baked-on gray enamel unless otherwise specified.

TWIN POST
Neubauer
MANUFACTURING CO.
517 LOWRY AVENUE N.E
MINNEAPOLIS 18, MINN.

TOMORROW'S SUBSCRIBERS

Continued from page 32

and stand-by power equipment. Next comes the main distribution frame. We have terminal-per-station operation at International Falls, and a big hit is made with the children when they are shown the jumpers for their home telephones. We also compare the amount of jumper wire in use, 45 miles in our case, to the distance to a nearby town.

We then take the children into the automatic equipment and make a call from a test telephone, progressing the call from the line finder to the first selector, fifth selector, and from there to the connector finally ringing another test telephone. We find the children are impressed by this and believe it will help in reducing errors in dialing by the children.

The tour so far has been of the lecture type. To provide a little participation by the children, we take them to the COE supervisor's desk and demonstrate a "hands-free" telephone. Invariably, we find all the youngsters desire to call home over this telephone and we allow them to do so.

The next point in the tour is a trip to the toll switchboard where the group observes the toll operators at work, dialing on the inter-toll train, and timing and ticketing calls. The timing and ticketing of calls and the use of the Calculagraph are explained. A sample toll ticket is given to each student.

The tour ends in the plant maintenance room where the proper usage of the telephone is demonstrated. A new telephone is shown to the group and a cost comparison is made between the telephone and a bicycle. Any and all questions are answered by the guide and a lead pencil imprinted with "Minnesota Telephone Co." is given each student.

Normally the tour lasts one hour.

We believe the time, effort, and expense is more than repaid by the many letters of thanks received from the children.

Public relations wise, we show that the telephone company is not only represented by a telephone in the home and a monthly bill, but an organization of men and women and equipment eager to provide service and cooperation to the area.

We hope the youngsters will become "junior telephone salesmen" by telling their parents and friends a little about our company and its effort to give good telephone service.

Following each tour we receive letters from practically all of the children. The following letters were se-

Buyers know they can rely on

BUCKEYE'S Quality Products and Dependable Service

Reliable STRANDVISE STRANDLINK WIRE TERMINALS
Reliable DROP WIRE CLAMPS and ACCESSORIES
SPLICING SLEEVES
Reliable FUSES AND BLOCKS
GROUND CLAMPS
Reliable READY ACCESS TERMINAL
PROTECTOR UNITS
Reliable TEST CLIPS, TERMINAL BOXES AND STRIPS
PROTECTORS
Reliable CABLE TERMINAL BLOCKS
CABLE TERMINALS
Reliable WIRELINK WIREVISE
26 pair ST terminals are used in pole or wall installations only. Sliding formed aluminum cover is weathertight.
Protected type is illustrated

RELIABLE STRAND MOUNTED TERMINALS

Whether the plant employs protected or unprotected type cable terminals the design and dependability of the Reliable Strand Mounted Terminal upholds a forty-eight year old reputation for thorough engineering and thoughtful design.

Internal view typical of 6, 11 and 16 pair protected strand cable terminals.

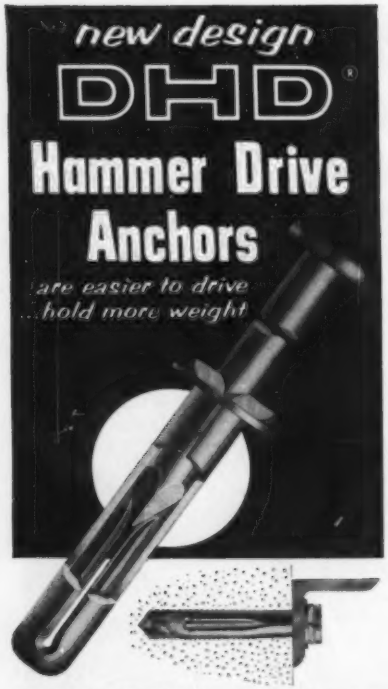
Illustrated information will be mailed on request.

Whatever Your Needs . . . . . It Pays to Call

BUCKEYE TELEPHONE & SUPPLY CO.

HUdson 8-0455

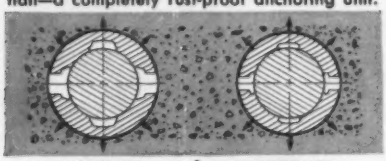
1250 Kinnear Rd. Columbus 21, Ohio



The DIAMOND DHD Hammer Drive Anchor, standard masonry fastener for the telephone and utility fields for nearly 30 years, has now been greatly improved with a newly engineered design, featuring

Internal Ribbed Construction

The addition of these ribs provides variable radial expansion for tight fit regardless of variation in hole size, developing the greatest *sustained* holding power ever possible. Aluminum anchor and hot dipped galvanized nail—a completely rust-proof anchoring unit.



STANDARD APPLICATION

Pressure of nail against ribs expands shield outward forming a tight, secure fit in hole.

UNDERSIZE APPLICATION

Wedging action of nail against ribs flattens them around nail shank as they transmit pressure outward. Grip is firm and positive. Hammer it home and it stays put.

Metal Won't "Creep"

Special aluminum alloy shield can't "creep." Because of this, the DHD Anchor withstands amazingly high sustained loads.

DIAMOND also supplies a complete line of masonry drills and accessories. All products are sold through qualified distributors. Call or write for information today. 1222

DIAMOND
EXPANSION BOLT CO., INC.
GARWOOD, NEW JERSEY
A complete line of Fasteners for Masonry and Hollow Walls
Masonry Drills — Pipe Clamps — Pole Line Hardware

Stocking Warehouses: Atlanta, Boston, Chicago, Dallas, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, San Francisco, Seattle, St. Louis, Washington, D. C. Also, Montreal, Toronto and Vancouver, Canada.

lected from the teacher and members of a fourth grade class after they had been conducted through our exchange:

My fourth graders wish to express their appreciation for the tour of your exchange. I had asked them to write a note and I would select one, but I thought that you and the staff would like to see how nicely they could write a thank-you. These are uncorrected, in the original effort.

May I add my sincere thank you also?

Sincerely yours
Helen Robinson
Teacher

•

Our class would like to express our kindness to you for showing us all the things to see. There were a lot of exciting things to see and hear every minute of our time there. Our boys would like to thank Mr. Cassibo for letting us all call our mothers on the "hands free" telephone. It was exciting to watch the long distance board being used. We think that it is a splendid telephone Company.

Ronnie Weum

•

Our class would like to express our appreciation for the tour. We liked the educational machines that Mr. Cassibo showed us. We especially liked the "hands free" telephone. We want to thank you for letting us talk to our mothers. It is a big improvement to have such a telephone exchange in our town.

Keith Lundquist

•

Our class would like to thank you for your kindness in showing us around the telephone company. We would like to thank Mr. Roxin for showing us the dial system. Also we would like to thank Mrs. Kaufman, long distance operator, for showing us how they plug the red instruments in. That is what we especially liked. We think that it is a great privilege for our town to have a company like that.

Bonnie Oveson

•

Our fourth grade class would like to express our gratitude toward you for your kindness. The line finders, relays, selectors, connectors, and ringing machine were very interesting. We especially liked the long distance office and the "hands free" telephone. It was all very educational and interesting. We are very thankful for your showing us through the exchange.

Raynell Walker

Dartnell Publishes Booklet Series For Supervisors

To help supervisors "bridge the gap" between standing still and increasing their job and man productivity, The Dartnell Corp., Chicago, has launched a "What a Supervisor Should Know" series.

The booklets written by various au-

If it's TOWERS you need, check ROHN *FIRST!*

AMERICA'S FINEST COMMUNICATIONS TOWER OF ITS KIND . . . WITH EXCLUSIVE BUILT-IN ECONOMY

√ Reduce Costs

—by getting a tower *specifically for your* job. These towers are suitable for use up to 300 feet guyed—or self supporting to 50-60 ft.! ROHN towers are in daily use for micro-wave, radio and dozens of all type communications requirements throughout the U. S.—at big savings—yet more than do the job! Can be used for a multitude of jobs.

√ Proven design

—get full engineering data to prove superiority. Gleaming, hot-dipped galvanized finish available—stays shiny and new—no painting needed. Design fully tested—proved by thousands of installations. Easily shipped and inexpensively installed. Cross pieces form natural ladder for servicing.

√ Special Towers

—you're invited to submit your requirements. Towers will be built to your specifications if practical. Let us know your needs—ROHN can satisfy them BEST when it comes to towers of this type.

Close-up of a Rohn No. 30 Tower used for radio communications. Note guying arrangement, triangular tower design—natural "ladder" for antenna maintenance. This tower is easily erected—very moderate in cost.

FREE

Send for new "Specifications & Price" catalog for Rohn Communications Towers. Your inquiry will receive prompt attention. Rohn representatives are coast-to-coast to serve you. Write—phone—wire

ROHN *Manufacturing Co.*

116 Limestone, Bellevue Peoria, Illinois

"Pioneer Manufacturers of TV and Communication Towers of All Kinds."

thorities handle the varied subjects of co-operation, salesmanship, profits, keeping physically fit, personal public relations, self-analysis, motivating others, quality control, etc.

The "What a Supervisor Should Know" series will be published monthly (minimum order: six copies a month) and can be purchased from Dartnell Corp., Publishers, 4660 Ravenswood Ave., Chicago 40, Illinois.

IN THE NATION'S CAPITAL

Concluded from page 22

tie-in between utility customer promotion and the sale of entirely unrelated products, where will it all end? If soap is sponsoring a subway riders' campaign today, can cigarettes, beer, electric shavers, and all the other noisy acrobats on the TV screen be far behind?

Fortunately, in this respect, the merchandising requirements of the telephone industry lie in the field of subscription and appliances rather than in the promotion of calling traffic, per se. Otherwise the telephone companies might be getting offers from the manufacturers of various mass appeal products, including soap, food, cigarettes, and appliances to tie-in their sales with the price of a telephone call.

Charles L. Patterson, chairman of the authority, hinted that he hoped the idea would spread. He said: "We are happy to participate in this campaign. I hope it will encourage other businesses to do likewise."

Politics may make strange bedfellows, as the saying goes; but imaginative business promotion can turn up some positive freaks by way of partnership.

New Deputy Chief Signal Officer Named By Army

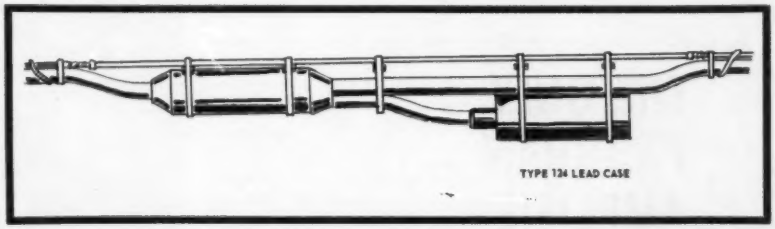
Brig. Gen. Ralph T. Nelson, commander of the U. S. Army Electronic Proving Grounds, Fort Huachuca, Ariz., will become the Deputy Chief Signal Officer of the Army on Aug. 1. He will succeed Maj. Gen. Emil Lenzner.

Major General Lenzner will join the faculty of the University of Arizona as associate dean of the College of Engineering following his retirement this summer.

In other realignments, Maj. Gen. James Dreyfus of the Office of the Chief Signal Officer will become Deputy Director for Communications and Electronics, Joint Staff, JCS (Joint Chiefs of Staff), effective Aug. 18. He will be succeeded as chief of the procurement and distribution division by Brig. Gen. Herbert L. Scofield.

CEECO LOADING COILS *in Type 124 Lead Cases*

These cases are for aerial mounting. Five foot cable stubs are standard unless otherwise specified. Stubs may be either lead or plastic cable. Special assemblies may be constructed to meet other requirements.



Voice frequency coils, type 632(88MH) and 638(44MH) are primarily designed for use on two wire telephone cables. Types MF10, MF11, 641 and 642 coils are furnished for quadded interoffice and toll cables.

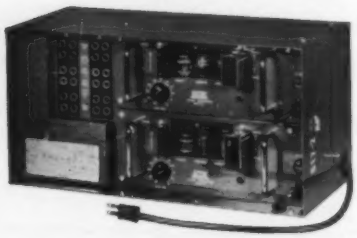
CEECO assemblies give "Life like" voice transmission and reception to your long cable and rural distribution wire circuits. "Life like" telephone transmission is a clear easily understandable telephone conversation over the necessary frequencies present in the voice to be heard via the telephone in the same volume as in "face to face" conversation. Telephone companies providing such quality service will increase subscribers desire to use LONG DISTANCE more often, thus increasing revenue.

WRITE US FOR ASSISTANCE ON YOUR LOADING PROBLEMS

CEECO LOADING COILS are sold by your Telephone Equipment Supplier

COMMUNICATION EQUIPMENT & ENGINEERING COMPANY
5646 West Race Avenue • Chicago 44, Illinois
Phone EStebrook 8-3109

NEW!
FROM ALTEC



ALTEC S-17B Program Amplifier System

THE ONLY PROGRAM AMPLIFIER SYSTEM

providing in one frame: Two amplifiers that can be used together or independently. Two line equalizers, adjustable without strapping. Two jack fields—for easier testing, equalizing, monitoring. Self-contained power supply.

Portable or rack-mounted, this easy-to-install, time and money-saving unit replaces up to 10 separate pieces of equipment. The new S-17B provides broadcast quality wide range program channels for radio, FM, TV and wired music. Plug-in amplifiers are easy to inspect, repair or replace.

Thoroughly field tested—60 were used to broadcast the Pasadena Rose Parade and the Rose Bowl Game.

Weight: 44 pounds.

Output Power: +24 dbm.

Distortion: not over ½% THD (30-15,000 CPS at +24 dbm).

Gain: at least 44 db; adjustable to minimum of 8 db.

Equiv. input noise: —115 dbm.

Input impedance (internal): 150/600 ohms ±5%, 30 to 15,000 cps.

Output impedance (internal): 150/600 ohms ±5%, 30 to 15,000 cps.

Longitudinal balance of input circuit and output circuit with 600 ohm connection:
55 to 60 db at 40 and 15,000 CPS
70 db at 1000 CPS

For complete information about ALTEC telephone and paging equipment call Graybar.

Famous for Quality and Dependability

ALTEC LANSING CORPORATION

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ALTEC LANSING CORPORATION
1515 S. Manchester Ave., Anaheim, Calif.
161 Sixth Ave., New York 13, N.Y. 6TP

ILLINOIS CONVENTION

Concluded from page 30

always be with us, and then take steps as it can to encourage improved operation by pointing out its advantage from just a regulatory point of view alone—that good management and good earnings are the key to good service and to the most economical service over the long run," Commissioner Colter stated.

In this "huddle" at Springfield are R. A. Lumpkin (left) of Mattoon and R. C. Reno, editor of TELEPHONY.

The full text of Mr. Colter's address appeared in the June 14 issue of TELEPHONY.

J. G. Hardy, secretary of the Illinois Association, in his annual report, traced the activities of the association's office during the past year.

He told of the 1957 clinics sponsored by the association's plant committee featuring buried cable and wire construction, installation of station apparatus, and the use of proper testing equipment. A total of 337 persons, representing 84 telephone companies, attended the four plant clinics.

He reported also that the association's traffic committee held eight toll tributary meetings during 1957. The program of these meetings consisted of discussions on public relations and merchandising, in addition to a review of toll operating practice changes.

Regarding conversions to automatic operation in the State, Secretary Hardy reported that, during the past year, 63 Independent and 35 Bell exchanges were converted. As of Apr. 30, there were 360 Independent exchanges and 200 Bell exchanges operating on a dial basis.

Other speakers at the convention were John M. Skube, capital stock assessor of the Illinois Department of Revenue, who explained the Illinois capital stock tax; J. L. Buford, superintendent of schools of Mt. Vernon, Ill., who pleaded for greater support for additional financing of schools at the local level; and the Rev. William E. Skadden of Springfield, Ill.

The following directors were re-elected by the convention: R. A. Lumpkin of Mattoon; W. R. McGrew of Park Ridge; A. T. Renn of Chicago; Burton W. Saunders of Springfield, and K. L. Schroeder of Freeport.

R. W. Britt of Springfield also was elected a director.

Other directors are Gordon Aller of Chicago; R. J. Alter of Galesburg; Don Anderson of Geneseo; Donaldson Coombs of St. Louis, Mo.; W. C. Drysdale of Rantoul; M. A. Kugler of Okawville; Russell Logue of Casey; Daniel Schaefer of Sycamore, and Roland Schmidt of St. Jacob.

The directors elected the following officers: President, Mr. Schroeder; vice president, Mr. Schaefer; treasurer, Mr. Alter; secretary, J. G. Hardy, and general counsel, Ben B. Boynton.

We Call It Socialism

It (despotic government) covers the surface of society with a network of small, complicated rules, minute and uniform, through which the most original minds and the most energetic characters cannot penetrate, to rise above the crowd. The will of man is not shattered, but softened, bent, and guided: men are seldom forced by it to act, but they are constantly restrained from acting: such a power does not destroy, but it prevents existence; it does not tyrannize, but it compresses, enervates, extinguishes, and stupefies a people, till each nation is reduced to be nothing better than a flock of timid and industrious animals, of which the government is the shepherd.—ALEXIS DE TOCQUEVILLE, *Democracy in America.*

IT'S NEW!!
IT'S HYDRAULIC!!
IT'S A REEL TRAILER!!
**IT'S A CABLE LAYER!!

IT'S THE NEW "RYAN" COMBINATION REEL TRAILER AND CABLE LAYER!!!!

****When it's equipped with a cable laying attachment with a RYAN patented blade**

A new low-cost, dual purpose tool that fills a need in all telephone and utility companies—both large and small.

- **Self-contained hydraulic system . . .**
- **Built-in leveling mechanism . . .**
- **Lifts 8,000 lbs. . . .**
- **Hauls poles . . .**
- **Electric brakes . . .**
- **9.00 x 20 or 10.00 x 20 tires . . .**
- **Hydraulic tongue jack . . .**

When used as a cable layer, a second reel shaft is available for placing two wires or small cables at one time.

No special equipment required on towing tractor when used for placing cable.

Pull Type and Tractor Mounted Cable Layers and Hydraulic Reel Trailers

F. B. RYAN MFG. CO., INC.

CHARITON, IOWA **PRescott 4-4312**

30 Day Free Trial Offer!!

The All New Terminating Board Model TBZ

for use with the Murphy Cable Tester

We'll gladly send one TBZ Terminating Board to each division or area for a 30 day free trial. No obligation! If you don't see that the fabulous TBZ will *save you money, save hours of time, is simpler to use,* and *has a wider variety of uses,* send it back in 30 days and there will be no charge.

TBZ's simplified construction uses only ten standard binding posts instead of 20 special ones . . . ten slots instead of 101 holes as in standard tag-boards. No holes to thread wires through. Lay them speedily in ten clearly numbered slots.

Only $25 each. Greater savings when ordered in quantities. Write for additional information on the TBZ as well as a complete brochure of all Murphy products for the telephone industry.

ELECTRONIC RESEARCH DEVELOPMENT MANUFACTURE

MURPHY ENGINEERING LABORATORIES, Inc.

4419 Tulsa **Houston 24, Texas**

Ingenuity is often an attribute of telephone men and shown above is the first-prize float entered by the Selah (Wash.) Telephone Co. in a recent Community Day Parade. The float, costing $21 and representing over 50 hours of work, was built by Robert Johnson, the Selah company's office manager. Eddie and Jim Walsh, sons of Selah company Installer Edwin Walsh are shown pulling the creation. It featured a battery and ringer installed inside so that the telephone rang as the float moved along. Also in on the parade are Jane and Lisa Johnson, daughters of Robert Johnson; and the girls' friend, Susy Silvers. Lisa Johnson gave the float a personal touch by riding right in the dial.

Vail Citations for Heroism Given Two Bell Employes

For their action in helping save the life of a Chicago resident, two Illinois Bell Telephone Co. employes, Mrs. Grace E. Stephenson and Mrs. Veronica M. Noonan, were awarded Vail citations for heroism, on June 4.

The awards named for Theodore N. Vail, former president of American Telephone & Telegraph Co. were given for "initiative and noteworthy public service."

On the morning of Dec. 5, 1957, Mrs. Irvin W. Reynolds, Chicago, placed a call through Telephone Operator Noonan to Chesterton, Ind. Mrs. Noonan thought the woman sounded ill, so, after completing the call, notified her supervisor, Mrs. Stephenson.

At the end of the long distance conversation, Mrs. Stephenson rechecked Mrs. Reynolds, who told her she was ill and home alone.

Mrs. Stephenson told her to unlock her door. She then obtained the telephone number of another apartment in Mrs. Reynolds' building. She summoned aid at this number.

Mrs. Stephenson then called the fire department for an inhalator. When the fire department squad got to Mrs. Reynolds' apartment, they found her lying on the floor, the victim of a heart attack.

Mrs. Stephenson helped get transportation for Mrs. Reynolds to a nearby hospital. Finally, she called Chesterton, Ind., and told Mrs. Reynolds' son about his mother.

GENERAL
MACHINE PRODUCTS
COMPANY, INC.
Old Lincoln Highway at
Pa. Turnpike, Trevose, Pa.

Aerial Tents
Cable Benders
Cable Blocks
Cable Lashers
Coaxial Cable Tools
Lashing Wire Clamps and Grips
Portable & Power Reels

Pressure Testing Kit
R S Power Reel
C R Power Reel
D Cable Bender
B, C, D, E & G Cable Lashers
Special Purpose Tools To Specifications
Literature on Request
Over 500 various items of Line Construction Tools, Maintenance & Pressure-Testing Equipment in stock for Immediate Shipment
SPECIALIZED COMMUNICATIONS EQUIPMENT SINCE 1918
GMPCo

Scholarship Offered By Citizens Utilities

Richard L. Rosenthal, president of Citizens Utilities Co., Stamford, Conn., announced on June 13 the opening of the 1958 award program of the $500 "Citizens Utilities Co. — Joseph C. Briggs Memorial Scholarship." This scholarship is a continuation of the Citizens company program of financial assistance to high school graduates desiring to pursue higher education. The scholarship award will culminate a nationwide competition among children, grandchildren, brothers, or sisters of employes of Citizens Utilities Co. Citizens operates telephone, electric, gas, and water, units serving more than 250 communities in eight states: Arizona,

California, Colorado, Idaho, Illinois, Maine, Pennsylvania and Vermont.

The scholarship was established as a memorial for the former administrative vice president of the company, who met an untimely death in an automobile accident in November 1951.

The $500 annual award is made up of the voluntary contributions of more than 25 employes associated with the company and a contribution by the company.

Awards are made on the basis of scholastic records in high school, recommendations of school and community leaders, and a brief competitive examination given the applicants.

Announcement of awards for the 1958-1959 school year will be made between Aug. 15 and Aug. 31, 1958.

In addition, Citizens Utilities Co. has established a program of making available subsequent on-job training in the summer months for those who receive scholarship awards. Mr. Rosenthal advised employes of the company that this on-job training experience would supplement academic training for those receiving scholarship awards and would also enable students to earn something toward the cost of their subsequent education.

He also stated ". . . The award is part of our effort to make a continuing contribution to the American tradition: Opportunity for ability and reward for endeavor — regardless of origin or creed."

Asks Sale of Virgin Islands System to Private Owner

Virgin Islands Gov. Walter A. Gordon has proposed that a government-operated telephone system be sold to private enterprise, it was reported on June 1.

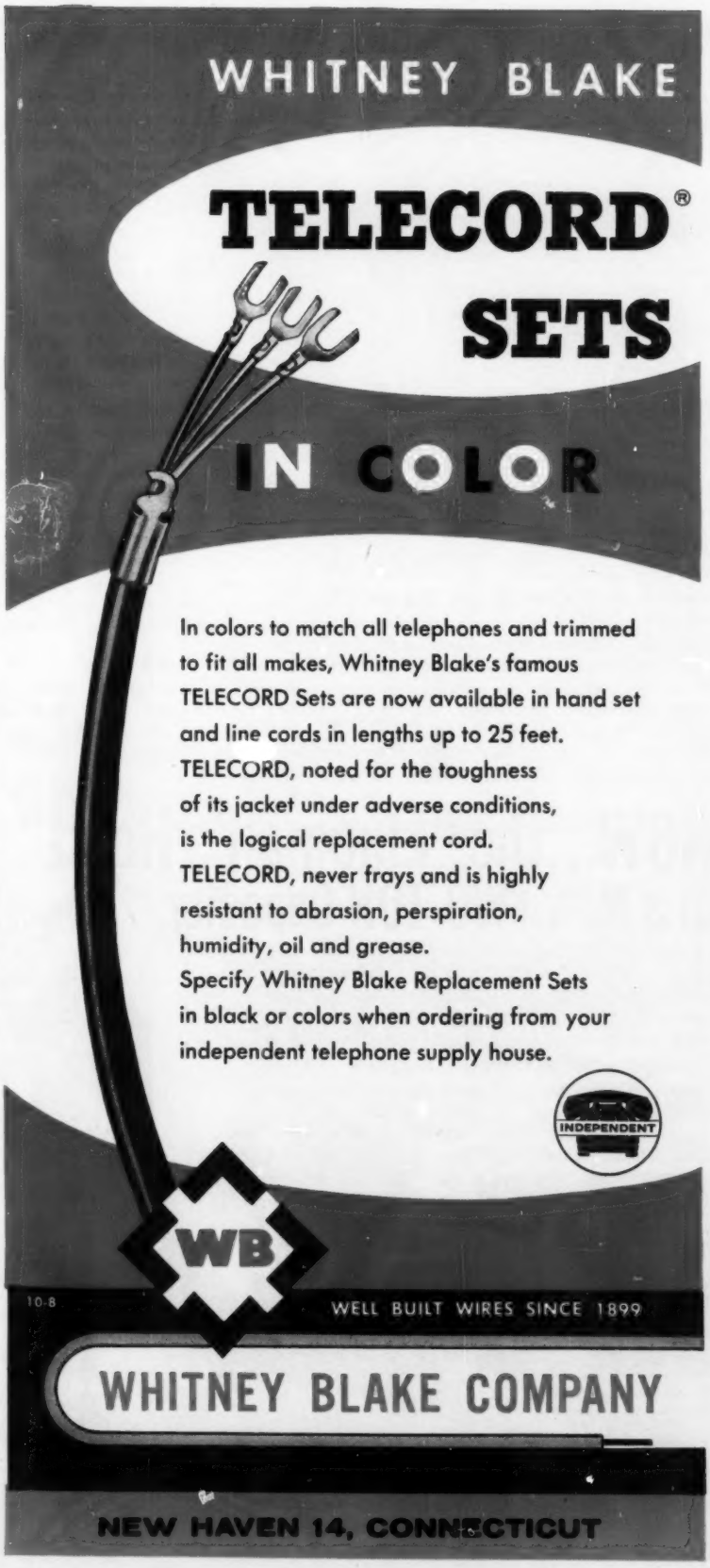
If the Islands' legislature approves the measure, sealed bids for the system will be solicited in the mainland. The government has been operating the system without profit for years, the report stated.

Henry S. VanDevanter, manager of the system, said "the situation has reached a point where we either have to sell it, or spend more than one million dollars getting it in shape."

Since 1952, the number of telephones in the islands has nearly tripled—600 to 1,700. There is a waiting list of 130 applicants.

Obituary

MRS. PATRICK CAREY, who operated the Petersburg (Neb.) Telephone Co. with her husband, died on May 4. Death was due to a heart ailment.


WHITNEY BLAKE
TELECORD®
SETS
IN COLOR
In colors to match all telephones and trimmed to fit all makes, Whitney Blake's famous TELECORD Sets are now available in hand set and line cords in lengths up to 25 feet.
TELECORD, noted for the toughness of its jacket under adverse conditions, is the logical replacement cord.
TELECORD, never frays and is highly resistant to abrasion, perspiration, humidity, oil and grease.
Specify Whitney Blake Replacement Sets in black or colors when ordering from your independent telephone supply house.
INDEPENDENT
WB
10-8
WELL BUILT WIRES SINCE 1899
WHITNEY BLAKE COMPANY
NEW HAVEN 14, CONNECTICUT

LONG-RANGE PLANNING FOR STATION GROWTH

Continued from page 25

we can gain a further 5 million telephones concern such things as these:

(1) Introduce new service features in the home, such as simple intercommunications between telephones.

(2) Adapting new apparatus designs to particular use such as flush-type telephones, no-hands telephones, small bedroom telephones, nursery room monitoring, and door bell answering telephones.

(3) Designs permitting the easy and economical change of colors.

(4) Development of package service with tariffs tailored to it.

(5) Finding out just what the customer wants by asking him and giving it to him even though this accelerates depreciation.

This illustrates the new concepts.

The next slide (see *Fig. 4*), shows the same 15.1 million estimate as the previous slide, but on a semi-log scale. The slant of the curve here, as before, tends to remove the reaction that the estimate is fantastic.

When this story was given to our executives their first reaction was that we had our heads in the clouds. Their more considered judgment, however, was that if anything we were too conservative—that they, the people who have to carry the ball, could do the job.

[EDITOR'S NOTE: There is one thought of interest indicated, but not spelled out, in the author's presentation. That is, the difference between the 7.3 million stations, bottomed on past growth, and the 15.1 million stations based upon potential, is also the difference between what customers *demand* as their minimum service requirements and what they *want* in these modern times when the telephone is taken for granted and when emphasis is placed upon convenience, service and time saving.

In other words, the 7.3 million station status could be obtained by just continuing to meet the minimum service demands of the public, while an *additional* 7.8 million station gain should be obtainable by giving the people what they want and need in the way of telephone service. Stated another way, the author suggests we probably are developing less than half as much telephone service as the public would like to have.]

Long-Term Is Basic

A long-term plan such as described may be said to be basic or fundamental. By this I mean it furnishes the answer to the question of how big the company will become and the rate of growth by which the future size will be achieved. Certainly, it would be difficult if not impossible, for example, to lay a plan for recruiting and training future personnel, or for capital, or any other kind of future requirements without such a basic or fundamental plan.

It would seem reasonable, therefore, that before an effort is made to lay long-term future plans for anything related to company size and rate of growth, a basic plan on what the size of the business will be should be considered.

If you please, let us turn our attention for a moment to one important consideration implied in long-term plans —those extending over a long period of years—say 20. I believe it is safe to assume that the goal of such a plan is going to be reached by a succession of relatively short, distinct steps rather than by one long, continuous, uninterrupted effort. These "steps" in effect are the segments or the component parts of the long-term plan. They are the realities of the present. They affect the pocketbook *now*. They may be required to solve specific, current problems as they contribute to the long-term goal. They provide pressure for the everyday job.

Because of these facts of life, the direction taken in these segments—or short-term plans — may temporarily veer off from that laid out in the long-term plan. The deviation generally would be in extent or timing rather than in aim. By this I mean that when the long-term plan was laid certain volumes might have been estimated for certain dates. While the over-all estimate might be entirely realistic the path to the goal may be one of ups and downs instead of a smooth curve. This is characteristic of growth and to that extent need cause no concern. If the deviation, however, is from the aim or objective the plan itself should be re-examined.

Short-term plans designed to coordinate with long-term plans give rise to a question. Are short-term plans a responsibility of the planner? Or does the responsibility for them rest entirely within the departments? While different positions may be taken on this point, I believe we'll have no problem in agreeing that, whoever takes the responsibility, a high degree of coordination is required to see that the parts are properly related to each other and that each is completed substantially on schedule. Without this coordination waste is sure to follow. I am inclined to the view that the planner does not belong in the short-term or implementing phases of the long-term plan for

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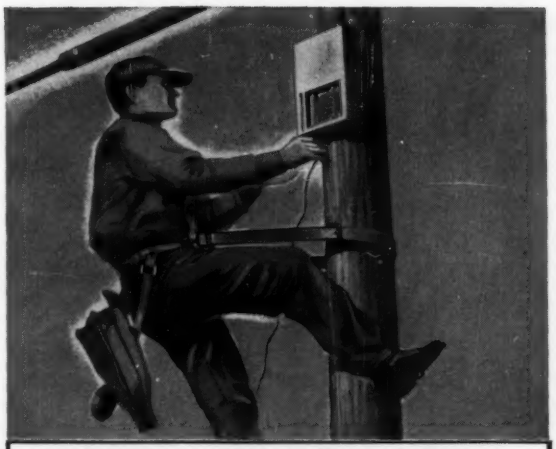

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PARALLEL DROP WIRE SPLICE

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- Completed Splice
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which he might have been responsible. If short-term plans concern complex situations, which can easily get out of step, then maybe someone outside the operating departments should be given the responsibility to see that the several interrelated short-term plans move together and in harmony. So much for "short-term" plans.

After a long-term plan has been accepted, after the "goal" has been set, the president and his staff naturally will want to know from time to time the progress being made. They will want a report particularly with respect to a *basic* long-term plan and probably, although not necessarily, with respect to most subsidiary long-term plans.

Single Supervisor

It is easy for a busy departmental administrator to become so engrossed in current problems that he allows a long-term plan set months ago—or maybe years ago—to become sidetracked. This is all the more likely to happen if changes in key personnel occur. With this being nothing more than realism, it may be desirable that some one person in the organization, as was just suggested for short-term plans, be charged with the responsibility of keeping an eye on all the activities related to a particular long-term plan and to see that it is kept on the track, and that, if revisions are necessary, they are made orderly and with all knowing about them. The assignment of this responsibility might include periodical progress reports.

I'll just take a moment to summarize these comments and their implications. There must be better ways of doing things than as we've always done them. Too, there must be new opportunities which can be found and developed by a competent person with time to think. The underlying purpose of formalized planning is to do a better job, notably in profits. A "plan" which meets this test may fall by the wayside if the case for it is not clearly and carefully presented. It must be accepted by all officials, from the president down, as setting a reasonable goal.

I believe it will be noticed that the thread of thought running through these comments is that the planning department in a company should be small. I have no suggestions as to how small it should be but I do have this thought: If the planner is going to have time to "think" within the meaning we've given the word here, he must be free of the problems inherent in directing even a moderately large department.

United Companies Name Hix Commercial Head

J. G. Kreamer, vice president in charge of general operations for the United Telephone Co's. of Arkansas, Kansas, and Missouri, subsidiaries of United Utilities, Inc., of Abilene, Kan., recently announced six promotions and transfers.

Verne E. Hix has been named general commercial superintendent, suc-

V. E. HIX

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ceeding Dee Adams who will become secretary and treasurer of the Central Kansas Power Co. and the Union Electric Co., the power and merchandising subsidiaries of United Utilities, Inc.

Mr. Hix will direct the commercial departments for the telephone companies. He is a graduate of the Fairfield, Ia., High School and started in the industry in 1939 as a lineman with the Iowa State Telephone Co.

In World War II he served with the Army Signal Corps from 1942 to 1945 in the South Pacific. On his return, he transferred to the Central Missouri and Arkansas Associated Telephone Co's. at Warrensburg, Mo. as plant superintendent. After these properties were merged with the United System, he became purchasing agent and plant engineer at the company's Kansas City offices. Subsequently, he was promoted to outside plant and station engineer, in which position he continued to the present.

Dee Adams has held the general commercial superintendent's position since 1952. He now will also assume the duties of assistant secretary and treasurer of the United Telephone Co's. of Arkansas, Kansas and Missouri.

He is a business administration graduate of the University of Kansas. In 1922, he joined the auditing division of the United System's general accounting department.

From 1930 to 1937, he was traveling auditor for United's Kansas and Missouri operations. Next, he was appointed secretary-treasurer of the United properties in Arkansas and Missouri. In 1940, he was promoted to division commercial and traffic superintendent for 41 exchanges in Missouri and Arkansas. He held this post until he became general commercial superintendent.

Mr. Hix will be succeeded as outside plant and station engineer by John W. Herdt Jr., who has been employed with the United Telephone Co. of Kansas, Inc. since 1943. Mr. Herdt served many years as equipment supervisor. In 1956, he became assistant outside plant and station engineer for United's Arkansas, Kansas and Missouri operations.

Eddie Mares has been transferred from his position as equipment supervisor at Russell, Kan. to assume the newly created position of dial equipment maintenance engineer in Kansas City. Mr. Mares will also be responsible for coordination in future conversions to dial service.

Charles B. White has been named assistant district manager for the Maryville district of the United Telephone Co. of Missouri after transfer-

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Full color-coded insulation assures lasting polarity identification
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WELL BUILT WIRES SINCE 1899
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ring from his combination "B" position at Horton, Kan.

In addition, Wilmot W. Poese assumed the newly created position of district commercial and traffic supervisor for the Rolla district of the United Telephone Co. of Missouri. He also formerly held a combination "B" position at Salem, Mo.

General of Indiana Notes Two Top Personnel Changes

Two changes in top personnel of General Telephone Co. of Indiana have been announced by L. H. Meyer, president.

W. A. McCullour, secretary-treasurer, has been elected to the newly-created position of vice president-revenue requirements. Succeeding him as secretary-treasurer is Robert Mutch, who has served as assistant controller of the Indiana company since 1956. Both men will make their headquarters in Fort Wayne.

Mr. McCullour, who joined the General System in 1951, formerly served as assistant controller of the parent company, General Telephone Corp., and as controller of the General Telephone Co. of Michigan. In his new position, he will be responsible for current and long-range profit management.

Prior to joining General, Mr. McCullour was treasurer and chief accounting

W. A. McCULLOUR

officer of the Central Ohio Light & Power Co. He also was employed for a time by an independent public accounting firm in Cincinnati.

A graduate of Ohio State University, Mr. McCullour is a member of the Controller's Institute of America.

ROBERT MUTCH

Mr. Mutch has been associated with the telephone industry for the last 24 years, serving in various capacities in the accounting department.

The new secretary-treasurer joined the Illinois Telephone Co., a predecessor company of General Telephone of Illinois, in 1934 as plant accountant. Since then he has been auditor, assistant secretary and secretary with various predecessor companies in the General System, serving in Pontiac, Ill., Chicago and Terre Haute. He also was employed for a period with the Pennsylvania Community Telephone Co. in Bangor, Pa.

He has held his present position as assistant controller since Dec. 1, 1956.

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and have 167% more beam candle power at the same time plus longer bulb life

The efficiency of LIGHT-STICK'S 6-volt circuit does it. Four standard batteries working together give 150% more burning time than the standard 2-cell light.

With rust-proofed 24-gauge steel case, unbreakable lucite lens, protective rubber collar and heavy 2-conductor cord, LIGHT-STICK lasts years longer.

LIGHT-STICK with swivel head meets every lighting problem...stands up firmly or lays flat on side *without rolling*. It has a belt clip, carrying ring and hanging slot. Though it costs a little more, LIGHT-STICK pays for itself in savings, service and satisfaction.

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You get a neat and long-lasting job every time you use PAGE Stainless Steel Lashing Wire! Ideal for lashing conductor cables (lead or neoprene covered) to a strand messenger by Neale or Western Electric Machine. Coils tailored to fit machine specified.

3 GRADES · EACH IN 2 SIZES (.065 and .045)

Type 430 · for use with galvanized messengers
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Furnished six coils in cardboard carton (minimum order).

Other fine-quality products · You can depend upon PAGE Strand (Stainless or Galvanized Steel) and PAGE Stainless Dead-End Wire · See your Telephone Supply Distributor, or write our Monessen, Pa., office.

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CIRCUIT THEORY and DESIGN

By John L. Stewart, *California Institute of Technology*. Stressing modern, powerful pole-zero design methods, this book applies modern network theory to the understanding of vacuum tubes and feedback systems.

The author avoids use of abstract mathematics, yet gives data and design procedures of practical significance, discussing a wide variety of specific devices. The pole-zero design methods, given in easy-to-use form, show development of design for a large variety of circuits with and without vacuum tubes, and for systems with and without feedback. This book is a *must* for anyone interested in design and research in linear systems. **1956. 480 pages. 463 illus. $9.50.**

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NE FLORDUCT gives you a sturdy, economical way to locate and relocate telephone wiring. It's an all-steel lay-in raceway that will stand up to the heaviest office wear and tear.

Easy to install, Florduct is applied directly to the floor surface, then wiring is laid in and capping snapped in place.

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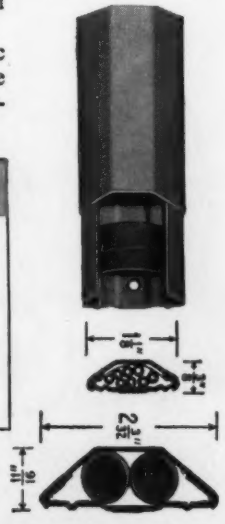

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Capacity . . . Four twisted pairs of inside telephone wires

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National Electric Products
PITTSBURGH, PA.
4 Plants • 12 Warehouses • 41 Sales Offices
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Kellogg Makes Eckhardt Sales Manager, Switching

Norman W. Eckhardt has been appointed sales manager for switching at Kellogg Switchboard & Supply Co.,

N. W. ECKHARDT

communications division of International Telephone & Telegraph Corp.

Mr. Eckhardt became affiliated with Kellogg in 1954 as field representative for the central division in Mansfield, O. He advanced through the positions of division engineer and division manager to his present duties.

After being graduated from Hobart College in New York with a Bachelor of Science degree in 1941, he served as a communications officer with the Marine Corps during World War II, seeing action on Guadalcanal, Peleliu and Saipan. He holds a reserve major's commission.

Mr. Eckhardt was an engineer with Stromberg-Carlson following the war. Later, he was an equipment engineer with General Telephone Co. of Pennsylvania. In 1952, he was employed as a consulting telephone engineer working with W. T. King, Inc., Lansing, Mich.

Leich Electric Company Promotes Reid and Dobbeck

Leon M. Wells, president of Leich Electric Co., recently announced two new appointments, that of Willard J. Reid as vice president and general manager, and that of Willard E. Dobbeck as production manager.

Mr. Reid has been associated with Leich Electric Co. for 17 years. For the past year he served as vice president in charge of production. He was also, at various times, factory superintendent, in charge of production control and time study, and production manager.

Mr. Reid's education includes a Bachelor of Science Degree in Electrical Engineering from the University of Illinois. He is a member of the Industrial Management Society.

His father, A. C. Reid, was president of Leich Electric Co. for many years, as well as chairman of the board.

WILLARD J. REID

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THE LINDSAY TELEPHONE SUPPLY CO., *Est. 1939*
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Mr. Dobbeck has been with Leich Electric Co. for 12 years. His most recent position was superintendent, equipment engineering. He has held this position since Dec. 1, 1954.

Prior to joining Leich, Mr. Dobbeck was employed in central office equip-

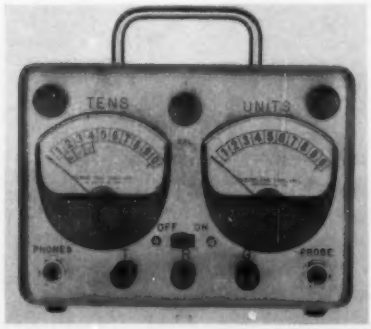
WILLARD E. DOBBECK

ment maintenance by the Lorain (O.) Telephone Co. for 15 years.

Mr. Dobbeck is a member of the American Institute of Electrical Engineers, as well as the American Society of Quality Control.

Brother's Keeper

"Infinite is the help man can yield to man."—CARLYLE.



The Murphy one-man working cable tester shown here is for use in identifying pairs, by numbers, in working or non-working cables. A photograph of this instrument was mistakenly featured in the Murphy Engineering Laboratories' advertisement in TELEPHONY's Directory of the Telephone Industry instead of a photo of that company's buzzer relay set. The Murphy one-man working cable tester is now being field-tested and is expected to be put into production shortly. The unit shown above works with a central office unit.

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Unaffected by
12 years of
Rugged Service
Still in service after more than twelve years . . . that's the exceptional record of WB Reinforced TELEPRENE Drop Wire . . . and there's only one reason . . . quality. By cutting drop wire replacement to the bone with Reinforced TELEPRENE, Whitney Blake has proved that even if you could get drop wire for nothing, unless it stands up as long as WB TELEPRENE, service calls and replacements would cost you more.
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WELL BUILT WIRES SINCE 1899
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. . . Widely used by 'Phone and Utility Companies

Speed erection and maintenance of Telephone and Utility lines with this 6" Field Range Finder. Measure line clearance, spacing and sag from the ground. Measure distances from 8 ft. to 100 ft. with accuracy to within 2%. Especially useful for inaccessible objects and places. These are sturdily built instruments . . . of such compact size they're easily carried in pocket. Dependable for years of trouble-free service in rugged use. Available in two models —Direct Vision and Overhead Prism. Each supplied with a top-grain genuine leather carrying case. Order by Stock Number (open account to rated firms).

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NATCO CORPORATION
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TRANSISTOR MARKS 10TH YEAR

Continued from page 26

ing a blind woman to "see flashes of light."

Part of the increasingly varied and widespread use of the transistor and its technology can be attributed to the increase in production of the device and the resultant lowering of unit costs. A transistor that would have cost $21 in 1953 can be purchased today for $1.50. One manufacturer even advertised in early 1958 a transistor "clearance sale."

Transistor production for commercial use has jumped from 1.3 million units in 1954 to about 30 million units in 1957. That output is expected to climb to the 300-million mark by 1965, and unit prices are expected to be far lower than today's vacuum tubes.

In the telephone industry, the Bell System expects by 1965 to be the world's largest single user of transistor electronics, requiring about 200 million transistors or related devices each year.

The new electronics born with the transistor is expected to help offset inflationary trends in the cost of telephone equipment, installation, operation and maintenance.

Commercially, militarily, scientifically and telephonically, the transistor is fulfilling the promise made 10 years ago—that it would have "far-reaching significance in the field of electronics."

Total industry sales remained below 5 million transistors a year until 1955. Since then the total has advanced rapidly. Projecting the trends evidenced in 1957, the following estimates of total industry sales have been made for 1958:

Entertainment field	**25,000,000**
Package or module field (including computer-data processing)	**15,000,000**
Communications	**10,000,000**
Military applications	**10,000,000**
Commercial development, hearing aids, instruments and miscellaneous	**5,000,000**
Total	**65,000,000**

In the 10 years since the announcement of the invention of the transistor by Bell Telephone Laboratories, the number of uses for the tiny device has climbed steadily upward.

A recent survey shows the number of companies using transistors in commercial products by applications:

No. of Companies	Type of Application
49	Instruments and accessories

The diffused base transistor circles the globe as part of the Vanguard satellite. Developed by Bell Telephone Laboratories, transistors of this type are in the satellite's radio transmitter. This year, Bell Laboratories marks the 10th anniversary of the discovery of the transistor.

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The new Simplex A1029 Reel Jack increases your men's efficiency by minimizing fatigue. Its lighter weight is a distinct advantage in loading, unloading and carrying to location, and its single-acting mechanism provides much easier lifting. Capacity 10 tons; weight 83 lbs. For reels up to 84" dia. Supplied with sturdy, laminated oak "T" base and 5' lever bar. Write today for full information.

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A1022—Aluminum Ratchet Lowering Jack for general lifting and lowering. Capacity 10 tons, weight 42 lbs.

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34	Universal type package circuits
29	Entertainment
27	Computer data processing equipment and packages
22	Communications
21	Hearing aids
16	Voltage converters
9	Voltage regulators
10	Miscellaneous

Transistors are being used in commercial products and devices that range from children's toys to guidance systems for missiles. A few applications for transistors are:

Hearing aids
Portable radios
Computers
Data processing devices
High speed data transmission equipment
Rural telephone carrier systems
Table model radios
Phonographs
Tape recorders
Amplifiers
Pre-amplifiers
Transistorized toys
Duck decoys
Automobile radios
Measuring equipment
Electrical test sets
Photographic and direct writing recording instruments
Tool controls
Voltage regulators
Servo systems
Sensing devices
Fire and burglar alarms
Controls for windows, doors, lights and appliances
Fuel injection systems
Ignition systems
Fuel gages
Power generators
Beacon transmitters for aviation
Direction finders
Personal paging systems
Selective mobile telephone calling equipment
Public address and intercom systems
Video amplifiers
Guidance systems for missiles
Radar
Fuses instrumentation controls

S-C Names Patent, Trademark Counsels

Floyd H. Henson has been appointed patent counsel, Telecommunication Section, and J. Warren Whitesel was named trademark counsel in the patent department of Stromberg-Carlson, according to a recent announcement by Theodore L. Bowes, assistant secretary and general patent counsel. Stromberg-Carlson is a division of General Dynamics Corp.

In his new position, Mr. Henson will be responsible for the administration of patent prosecution and infringement problems of the Telecommunication Division of Stromberg-Carlson.

Mr. Whitesel, as trademark counsel, will administer Stromberg-Carlson's trademarks affairs and will continue to handle contract review and patent prosecution assignments.

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FAIRFIELD, IOWA

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CHLOROTHENE
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NO FIRE HAZARD
EXTREMELY LOW TOXICITY
EXTRA HIGH SOLVENCY
RAPID DRY TIME

A safe effective substitute for Carbon Tetrachloride

- **Chlorothene is an excellent solvent for cleaning metals contaminated with greases, oils, tars and waxes.**
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- **Chlorothene is the answer to the search for a cold cleaning solvent that eliminates fire hazard that equals carbon "tet" in cleaning power and yet is only 1/20th as toxic. Chlorothene has no flash point—no fire point. Chlorothene permits cleaning of common metals, including aluminum with relative safety from corrosion.**

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1. A HAMMER
2. THE HILTI T-25H DRIVE TOOL
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and George Washington University, Mr. Whitesel is a member of the bar of the U. S. District Court and Court of Appeals for the District of Columbia, the Court of Customs and Patent Appeals, and the New York State Supreme Court. He is a member of the Rochester Patent Law Association, the American Patent Law Association, the New York State Bar Association, the American Bar Association, and is registered to practice before the U. S. Patent Office.

He has been with Stromberg-Carlson since 1950. During World War II he was in the Army serving in Europe, Panama, and the Far East.

■

Mr. Henson, a graduate of the University of Nebraska, joined Stromberg-Carlson as a telephone engineer in 1948. Four years later he transferred to the patent department and was admitted to the New York Bar earlier this year. He is registered to practice before the U. S. Patent Office.

Prior to joining Stromberg-Carlson, Mr. Henson worked for the Lincoln (Neb.) Telephone & Telegraph Co. During World War II, he served as a navigator-bombardier on a B-25 taking part in 50 missions in the South Pacific.

IT&T's FEC Names Project Manager for White Alice

Appointment of Myron Bakst as project manager for the White Alice integrated civilian-military communications system in Alaska was announced on June 10 by F. H. Lanahan, president of Federal Electric Corp. (FEC), Paramus, N. J.

FEC, service subsidiary of International Telephone & Telegraph Corp., operates and maintains the system under a contract with the Air Force.

Mr. Bakst was transferred to the system from the Distant Early Warning (DEW) Line, also operated and maintained by FEC, where he was assistant project manager. The DEW Line is a chain of radar stations extending 3,500 miles from Point Barrow, Alaska, to Baffin Island.

No Accident

"Chance generally favors the prudent."—JOUBERT.

First highway displays in the new outdoor advertising program for the nation's Independent telephone industry went up this month for Minnesota Telephone Co. of Minneapolis, and its subsidiary, Marshall County Telephone Co. of Warren. Twenty of the four-color, all-metal Scotchlited displays were erected along strategic highways leading into the companies' exchange areas in northern, western and southern Minnesota. Inspecting one of the displays on U. S. Highway 52 south of Cannon Falls are, from left: John Withy, owner of the St. Paul advertising agency which originated the program and is introducing it to the telephone industry; James Hartzell, vice president of Highway Display, Inc., manufacturers of the displays; and Elnathan Gates of Minneapolis, president of the Minnesota and Marshall County companies.

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B. J. Carney & Co., 100 N. 7th St., Minneapolis, Minn.—Western red cedar poles. Pentrex Butt Treated or Plain.

Cascade Pole Co., P.O. Box 743, Tacoma, Wash. — Creosoted Douglas Fir and Cedar Poles.

C. M. Christiansen Co.—Northern White Cedar Poles. Pentachlorophenol treated. Plant and Yards. Phelps, Wis.

Dierks Forests, Inc., Wood Preserving Division, 810 Whittington Ave., Hot Springs, Arkansas. Southern Pine select poles, all sizes and lengths, pressure-treated, creosote or penta. Prompt shipment.

Eppinger & Russell Co., 80—8th Avenue, New York 11, N. Y.—Creosoted Poles and Cross Arms. Plants: Jacksonville, Fla., Norfolk, Va., Eddington, Pa.

International Creosoting and Construction Co., Galveston, Texas.—Creosoted Southern Yellow Pine Poles. Plants Beaumont and Texarkana, Texas.

International Paper Co., Long Bell Division, 926 Grand Ave., Kansas City, Mo. —Pressure-treated Southern Pine and Douglas Fir Poles. Creosote and Penta preservatives.

Montana Pole & Treating Plant—Box 2004, Butte, Montana. Penta-Pressure treated Lodgepole Pine and Western Larch Poles. Inquiries invited.

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GENERAL COMMERCIAL MANAGER—capable man to take over commercial and bookkeeping department of Independent telephone company. Write D. J. Neale, Sr. Box 362, Centerville, Iowa.

MANAGER. Mature manager for a progressive medium-sized telephone company in a rapidly expanding territory in the far west. System training preferred. Give references, qualifications, personal information and wages expected. Reply Box 4107, c/o TELEPHONY.

MANAGER: Telephone System, 2000 stations, located in east central Illinois. Must be experienced in all phases of telephone operations. Please forward résumé of education, experience and salary requirements together with picture to W. A. Parker, Palestine Telephone Co., Palestine, Ill.

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LB 26, fuse chamber	20
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G-51, binding post chamb.	17
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